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ABSTRACT

This monograph contains a set of criteria to be used in helping program planners and administrators define competency based teacher education (CBTE) in the contexts of their situations. The criteria are the result of the collective work of individuals at 12 institutions of teacher education, and have been used: (1) by individuals in operational CBTE programs to help determine the extent to which their program is competency based; (2) by individuals about to embark on a program to develop a CBTE program to suggest "tasks to be completed" in their developmental process; and (3) in a modified form, to ascertain common elements of CBTE programs existing in a state system of higher education. This monograph is divided into three parts. The first part contains both a short and an amplified version of the instrument. The second part contains an item by item discussion of the criteria contained in the instrument; for each criterion this section includes a criterion statement; indicators for that criterion; and a discussion of the criterion, the indicators, and the author's rationale. The last part contains descriptions of how institutions have used the instrument and includes case study reports. (BD)

CRITERIA FOR DESCRIBING & ASSESSING COMPETENCY BASED PROGRAMS

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A Publication of the National Consortium of CBE Centers

PREFACE

The National Consortium of Competency Based Education Centers which assumes responsibility for the authorship of this paper is an informal association of institutions involved in the development and implementation of Competency Based Teacher Education. At the present time, there are nine National CBE Centers:

Florida State
Michigan State
Teaching Research/
Oregon College of
Education
Columbia
Georgia
Syracuse
Houston
Wisconsin
Toledo

Each of these centers is an outgrowth of CBE design and development activities initiated in 1968 as the Comprehensive Elementary Teacher Preparation Models with support from the National Center for Education Research. Today these centers are: 1) conducting research and development activities in the context of implementing a variety of CBE, preservice, and in-service CBE Program Models, and 2) providing development assistance and training services for those interested in installing competency-based education programs.

The Consortium: 1) serves as the coordinating body for the National CBE Centers; 2) serves as a conceptual forum focusing on the refinement and advancement of CBE concepts; 3) provides a source of CBE leadership at the National level; and 4) functions as a clearinghouse for the provision of developmental assistance to meet National priority CBE needs. The Consortium is currently engaged in developing two other major papers for National dissemination - one a position statement on the Governance by Consortium and the second a careful examination of a needed research on CBE - and is planning for a series of regional and National "think-tank" symposia and publications on key CBE topics, e.g., needed research, performance assessment, equality standards, and for materials development.

Each National CBE Center presents a unique profile of CBE activity and capability. All are engaged in some phase of implementing CBE programs - three have operational programs; all are developing and/or have developed management systems, competency lists, theoretical papers, and descriptions of their programs.

Although today the Consortium is a formally organized group of educational leaders in competency based education, it began as an informal group who had been instrumental in developing and studying the feasibility of models for exemplary teacher education programs under grants from USOE. This original group met from time to time to discuss their investigations and to share their ideas. Through fundings from various USOE sources this group, with occasional changes in personnel and designation, has managed to continue its professional relationships through frequent meetings and conferences in the area of competency based education.

During the first few years of its organization the Consortium divided its time between meetings which provided technical assistance to professionals from colleges, universities, and school districts involved in competency based education. Later it turned to extending the concept of CBE through program development, research and related activities.

One of the continuing problems faced by institutions attempting to re-do their teacher education programs in the direction of more competency based activities is the general lack of definition and criteria for just what constitutes a competency based teacher education program. Since 1972, the National Consortium of CBE Centers has been working on this problem. A rough list of criteria statements was produced for examination, an instrument was developed, explained and tested in several institutions, and the document from which this monograph is taken was produced. Professional educators associated with 13 operating CBTE programs have been involved in the development of the instrument presented herein.

FOREWORD

The Multi-State Consortium on Performance-Based Teacher Education is pleased to make available to interested readers this discussion of one of the issues of current import in the continuing effort to improve teacher education.

The Consortium wishes to acknowledge its gratitude to the National Consortium of CBE Centers for permission to publish and distribute the catalog.

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TABLE OF CONTENTS

INTRODUCTION:
RATIONALE
AND
DEVELOPMENT

Since the creation of the concept of competency based education it has had many interpretations. CBE has been defined in many different ways with uncounted different interpretations of those definitions. In practice, a few educational institutions, have designed programs which reflect in both principle and practice the fundamental concept represented by the term competency based education. Others appear to have had superficial acquaintance with the concept. They seem to have selected a few related notions and by implementing them have felt the right to call their programs competency based.

Probably the greatest number of those who misinterpret the concept have viewed CBE as primarily individualized instruction. Those who have taken this position have usually concentrated on preparing individualized (independent) instructional modules which they substitute for the subject matter units of their courses. These programs have changed little -- the best one could say for them is that though they remain subject matter type programs they are individualized to a greater extent than they previously were.

Another identifiable group has taken the notion of behavioral objectives, coupled it with some principles relating to teacher accountability, given emphasis to teaching performance and called it competency based. This group normally focuses on evaluation. In general they hold that it is the extent to which learning can be described behaviorally that determines the extent to which the teacher is competent. Here is a reflection of CBE but not a true representation in terms of the broader concept held by the authors.

For those who endorse an experience or activity program, CBE implies field experience. For them, the more teaching activities undertaken by the student the greater the teacher's store of experiences and thus the more likelihood of competent performance. Here the term competency based education is being interpreted as synonomous with field centered education. All would agree that increased attention to field experiences is a practice common to CBE, but it is unlikely that one would find more than a very small minority who view this as the major focus.

There have been those too who have sought to resist changes in practice but have accepted the terms. Some of this group claim, "We have always sought to prepare competent teachers. Indeed, for us, there is no change. Teaching competence is the underlying theme of our goals and objectives." There is some truth in what they say. For example, it is true that teacher educators have consistently sought throughout the past few generations to prepare competent teachers. However, there is a difference between the generic meaning of the terms competency and competence, and the specific meaning given to these terms in the language of that approach to education named "competency based education."

There are other interpretations of competency based education that vary markedly from that held by the authors. These four examples should suffice to point out that if there is to be an acceptable model from which to judge whether or not a program is competency based it is the responsibility of those who have been instrumental in designing the concept to present such a model.

Such individuals, represented by a group of about a dozen educators from nine teacher training institutions and agencies of the U.S. Office of Education met in Washington, D. C. in mid 1972 to begin the process of developing a set of criteria useful in helping program planners and administrators define "competency based education" in the contexts of their situations.

What started out to be a definitional model of competency based education was developed as a result of symposia in St. Louis, Houston, and San Francisco during 1973 into an instrument capable of a variety of uses. This instrument was improved by the authors at work sessions in Albany, Orlando, and Chicago in early 1974.

A tentative version was field tested at eight institutions* in March and April, 1974, and revised at a workshop attended by the "field testers" in Houston in May, 1974. The instrument contained in this monograph is the result of those activities. While it is primarily the work of the four authors, it is the result, actually, of the collective work of individuals at twelve institutions of Teacher Education.

This instrument has been used by individuals in operational CBTE programs to help determine the extent to which their program is competency based; it has been used by individuals about to embark on a program to develop a CBTE program to suggest "tasks to be completed" in their developmental process; and it has been used, in a modified form, to ascertain common or "standard" elements of CBTE programs existing in a state system of higher education.

The authors did not envision the potential usefulness for their "definitional model", when the original think-tank symposium began to work on the process. The variety of pilot study uses to which the instrument was put, however, seems to indicate that the need for such an instrument is real.

This monograph is divided into three parts - one containing both a short and an amplified version of the instrument, another containing an item by item discussion of the criteria contained in the instrument and the third containing descriptions of how institutions have used the instrument. For your convenience, the amplified version of the instrument appears twice in the document.

*OCE, Houston, Toledo, Georgia, Syracuse, FIU, Xavier and Weber State.

THE INSTRUMENT

(SHORT AND AMPLIFIED FORMAT)

SHORT FORMAT

Competency Specifications

1.0 Competencies are based on an analysis of the professional role(s) and/or a theoretical formulation of professional responsibilities.

2.0 Competency statements describe outcomes expected from the performance of profession related functions, or those knowledges, skills, and attitudes thought to be essential to the performance of those functions.

3.0 Competency statements facilitate criterion-referenced assessment.

4.0 Competencies are treated as tentative predictors of professional effectiveness, and are subjected to continual validation procedures.

5.0 Competencies are specified and made public prior to instruction.

6.0 Learners completing the CBE program demonstrate a wide range of competency profiles.

Instruction

7.0 The instructional program is derived from and linked to specified competencies.

8.0 Instruction which supports competency development is organized into units of manageable size.

9.0 Instruction is organized and implemented so as to accommodate learner style, sequence preference, pacing and perceived needs.

10.0 Learner progress is determined by demonstrated competence.

11.0 The extent of learner's progress in demonstrating competencies is made known to him throughout the program.

12.0 Instructional specifications are reviewed and revised based on feedback data.

Assessment

13.0 Competency measures are related validly to competency statements.

14.0 Competency measures are specific, realistic, and sensitive to nuance.

15.0 Competency measures discriminate on the basis of standards set for competency demonstration.

16.0 Data provided by competency measures are manageable and useful in decision making.

17.0 Competency measures and standards are specified and made public prior to instruction.

Governance and Management

18.0 Policy statements are written to govern, in broad outline, the intended structure, content, operation and resource base of the program.

19.0 Management functions, responsibilities, procedures and mechanisms are clearly defined and made explicit.

Total Program

20.0 Program staff attempt to model the attitudes and behaviors desired of students in the program.

21.0 Provisions are made for staff orientation, assessment, improvement, and reward.

22.0 Research and dissemination activities are an integral part of the total instructional system.

23.0 Institutional flexibility is sufficient for all aspects of the program.

24.0 The program is planned and operated as a totally unified, integrated system.

AMPLIFIED FORMAT

Competency Specifications

1.0 Competencies are based on an analysis of the professional role(s) and/or a theoretical formulation of professional responsibilities.

Indicators: 1.1 Rationale for program model and competencies is written

concrete and definitive ——— not written

1.2 Assumptions about learner's professional role, program constraints, and learning and instructional principles explicated

yes ——— no

1.3 Each competency in program can be logically linked to program model

all competencies	100% comp.	50% comp.	no comp.

1.4 Program personnel who designed program can describe rational and link competencies to model:

all personnel ——— only small core of developers

1.5 Entire program conceptualized as an integrated whole

total program conceptualized then specific parts developed	specific parts designed; overlap and gaps formed by analysis, then linked together	specific parts designed

1.6[1]

[1] Each criterion has an indicator added to facilitate the study of indicators unique to specific programs. Users are encouraged to add as many as are appropriate to the situation.

2.0 Competency statements describe outcomes expected from the performance of profession related functions, or those knowledges, skills, and attitudes thought to be essential to the performance of those functions.

Indicators: 2.1 Sub competencies and objectives are logically linked to those competencies expected for program completion.

always clearly related	usually related	never related

2.2 Instructional objectives are sequenced from entry-level behaviors to exit criteria.

sequence related to a logical rationale	sequence broad, determined by college	no sequence

2.3 Terminal competencies emphasize performance and/or consequence objectives, not cognitive objectives.

all are consequence and/or performance and affective competencies	most are consequence, performance, or affective competencies; a very few cognitive	all cognitive

2.4

3.0 Competency statements facilitate criterion-referenced assessment.

Indicators: 3.1 Competency statements are clear and concise.

all competency statements are clear to all students	most competency statements are clear to most students	none are clear

3.2 Statements include criteria levels and behaviors which meet acceptable standards.

all	none

3.3 Criteria are based on available evidence which is related to effective performance of teachers

all ——— none

3.4 Competency statements describe:

a. Settings or conditions for assessment

all ——— none
statements

b. Content of performance

all ——— none
statements

c. Level of performance for acceptable practice

all ——— none
statements

3.5

4.0 Competencies are treated as tentative predictors of professional effectiveness, and are subjected to continual validation procedures.

Indicators: 4.1 Program includes research component to validate competencies

Personnel and resources are specifically assigned to this component	Planned validation effort is evident	Some validation testing is done	No planned validation effort is evident

4.2 Competency statements are continually analyzed and revised

Statements are systematically reviewed for possible deletion or revision for each training cycle	Some competencies are revised or deleted for each training cycle	Competencies are treated as permanent objectives

4.3

5.0 Competencies are specified and made public prior to instruction.

Indicators: 5.1 Required competencies and options are known to learners as they enter program.

Written statement of competencies and diagnostic procedures are provided student as he enters program.	Written requirements are available to student prior to each program part.	Students can not describe the program, its competencies, and their options.

5.2 All required competencies are specified prior to initial instruction.

All specified and published	most	competencies written as program implemented

5.3 Indicators of competence vary among individuals and from setting to setting.

Flexible indicators as appropriate	Rigid indicators required of all

5.4

6.0 Learners completing the CBE program demonstrate a wide range of competency profiles.

Indicators: 6.1 Both required and optional competencies are included in the program.

many options open to students	no options

6.2 Individual learner needs dictate program emphases.

always generally never

6.3 Required competencies and options are made known to students in advance.

always generally never

6.4 Program options are not closed.

yes no

6.5 Students may choose program options.

yes no

6.6 Learner cognitive styles, teaching setting, area of instruction aid in determining program options.

yes no

6.7

Instruction

7.0 The instructional program is derived from and linked to specified competencies.

Indicators: 7.1 Competencies determine the learning outcomes to be acquired.

All learning outcomes (knowledge, skills, etc.) of the instructional program are derived and linked to specified competencies.

Activities are not related to specified competencies.

7.2 Activities provided for the student to use in acquiring the competencies are determined by the nature of the competency: (i.e., One does not learn problem solving skills from expository teaching).

Activities are derived from and linked to the competencies to be acquired.	The relationships between activities and the competency being acquired are not evident.

7.3 The elements in evaluation instruments are directly related to specified competencies.

Each element of student evaluation instruments is directly tracable to a specified competency	There appear to be no relationships between the items in student evaluation instruments and specified competencies

7.4

8.0 Instruction which supports competency development is organized into units of manageable size.

Indicators: 8.1 The size of the instructional unit is dependent upon program variables.

The size of the instructional unit is related logically to appropriate program variables.	The size of the instructional unit is not logically established. The size varies widely.

8.2 Instructional units are organized and partitioned to provide data and feedback on learner's stage of development.

At the end of each instructional unit the learner is given feedback on progress.	The unit size is not related to the student's feedback needs.

8.3 Learner's experience with instructional units is used to determine suitability of unit size.

Student's feedback concerning the suitability of units (by length, complexity, amount of content, etc.) is used to revise units.	No attempt is made to obtain knowledge of student's experience in using units.

8.4

9.0 Instruction is organized and implemented so as to accommodate learner style, sequence preference, pacing and perceived needs.

Indicators: 9.1 Instruction provides alternative learning activities.

Instructional units provide suggested alternate learning activities which accommodate the students' learning style.	No provision is made in instructional units for individual students' learning styles.

9.2 Program sequence includes a wide range of options.

Program sequence options are known by learner.	Program sequence options are neither known or available to learner.

9.3 Instruction is paced to the learner.

Learners proceed at varying paces through each segment of the program.	Some differentiation is made in learner pacing but determined primarily by learner circumstances rather than program design.	Learners all proceed at the at the same pace through the program.

9.4 Instruction provides for learner perceived needs.

Instructional units include "learner select" options for instruction.	Instructional options for achieving competence not available to program.

9.5 The learner is given opportunities to assess effectiveness of his preferred learning styles.

There are opportunities for the student to closely examine with technical and professional assistance the learning styles preferred.	Little or no attention is given to the relative effectiveness of particular learning styles as they are applied by particular individuals in reaching their objectives.

9.6 Conferences are held with learners at prescribed intervals.

Know schedule of conferences combined with open system where conference really held when needed.	No conferences held.

9.7

10.0 Learner progress is determined by demonstrated competence.

10.1 The student is knowledgable of the general nature of competencies and criteria used to determine the extent to which performance approaches professional standards for acceptability.

Student describes competencies and the standards for acceptability.	Student not able to describe competencies request or criteria that are acceptable.

10.2 Learner progress records are adequately detailed in terms of the competencies to be acquired.

Learner progress records are adequately detailed, in terms of the competencies to be acquired.	Learner progress records not kept on file.

10.3 Learner progress records are used to chart future programs' directions.

Learner progress records are frequently used to chart program direction.	Learner progress records are seldom if ever used to chart program direction.

10.4 The demonstration of progress in acquiring the competency is the focus of attention in determining the extent to which the learner is experiencing success.

Success is determined by extent of progress in acquiring the competency.	Success is determined by some other other criterion such as amount of knowledge acquired, or number of activities completed.

10.5 The instruction management system makes provisions for students to be working at various points of development concurrently.

Instruction is modularized and organized to be carried out individually or in small groups by variable scheduling techniques.	Instruction is based on the assumption that all students should acquire the same learnings at the same time.

10.6

11.0 The extent of learner's progress in demonstrating competencies is made known to him throughout the program.

Indicators: 11.1 Learner progress records are maintained and available to all concerned (learner, instructors, counselors).

Learner progress records are accessible, adequately detailed, and open to himself, instructors, and counselors.	Learner progress records are inaccessible, inadequate, and/or closed to students.

11.2 The instructional staff (instructors and counselors) and learner periodically review progress records in conference.

Student progress conferences are held frequently.	Student progress conferences are non-existent.

11.3 The instructional management system provides for the frequent and/or continuous updating of the student's progress records.

Progress records updated on a continuing basis.	Progress records if available are only updated at infrequent (i.e., semester end) periods.

11.4 The student is provided with opportunities to acquire skill in analyzing and evaluating his own professional behavior.

In addition to being provided with information about his progress, the student is helped to acquire skill in analyzing his own professional behavior.	Little or no attention is given to the analysis of the student's progress, and none in helping the student acquire this skill himself.

11.5

12.0 Instructional specifications are reviewed and revised based on feedback data.

Indicators: 12.1 Specifications for the instructional system are explicit and all concerned (students, instructors, counselors, instructional professional services personnel, etc.) are aware of these specifications.

A list of specifications for the instructional system is published.	Neither specifications nor policies concerning the instructional system have been recorded much less made known to those involved.

12.2 Procedures have been established for having students assess the instructional system.

On a frequent periodic or continuing basis students are asked to react to the effectiveness of the procedures used in the instructional system.	No attempt is made to obtain students' reactions to the instructional procedures.

12.3 A wide range of data is considered in the analysis of the instructional system. (Student time, instructor time, instructional resources, management needs, learner performance, etc.).

An extensive collection of data is used for the analysis of the instructional system.	No attempt is made to analyze the operation of the instructional system.

12.4 Data obtained from the analysis of the instructional system as provided by student feedback are used to revise the system.

On a frequent periodic or continuing basis the instructional system is revised from data provided by student feedback.	No systematic or regular attempt is made to revise the instructional system. Changes are made primarily on demand from some condition or authority.

12.5

Assessment

13.0 Competency measures are related validly to competency statements.

Indicators: 13.1 A listing of performance indicators is included with each competency statement.

Multiple indicators are present for all competency statements	Few competency statements have multiple indicators	No competency statements have more than one indicator

13.2 Indicators are logically related to competency statements.

all competencies	some of them	none

13.3 Measuring instruments are logically related to indicators.

all competencies	some of them	none

13.4

14.0 Competency measures are specific, realistic, and sensitive to nuance.

Indicators: 14.1 Competency measures discriminate between learners who demonstrate and those who do not demonstrate competency.

All measures most of the time	Most measures most of the time	Undetermined

14.2 Measures assess consistency of performance over time.

Always	Usually	Seldom

14.3 Reliability of instruments is known and high.

Computed for all instruments and high	Some instruments	Not known

14.4 Procedures for measuring competency demonstration are specified so as to assume quality and consistency.

Generally followed and known by data collectors	Procedures not specified, known or followed.

14.5 Data collection procedures require realistic time and resource expenditures by students and staff.

Realistic	Unrealistic

14.6

15.0 Competency measures discriminate on the basis of standards set for competency demonstration.

Indicators: 15.1 Specific acceptable standards are established prior to competency demonstration for all competencies.

Standards are set and made public.	Some standards are set in advance	Standards are dependent upon individual case, decided after competency demonstration.

15.2 Standards are based upon data.

Logic, data or research is used as basis for standards.	Standards are present but primarily based upon judgment or on negotiation among developers.	Standards are unknown or dependent upon individual cases.

15.3 Competency measures provide data indicating the extent to which standards are met.

For all standards	For some standards	For no standards

15.4 Standards are realistic expectations of professional developmental.

All standards appropriate for particular phase 2 professional development.	Some standards are appropriate	Standards are not realistic for particular phase 4 program to which they are applied.

15.5 Standards are applied based on the demonstration context.

Standards may be negotiated prior to demonstration.	Standards are modified in individual cases after competency demonstration attempted.	Standards are non-resistant or rigidly applied.

15.6

16.0 Data provided by competency measures are manageable and useful in decision making.

Indicators: 16.1 Data are collected and stored in an easily retrievable form.

Data on competency measures are collected and centrally stored.	Some data are collected, storage not planned or centrally located.	Not collected or not stored.

16.2 Data are reported at pre-specified decision points.

Reports are helpful to decision makers	Some reports are made as a result of special needs.	No reports are generated.

16.3 Data are used in making programmatic decisions.

Data are generated as a basis for decision making.	Occasionally data used as a basis for decision making.	Not used.

16.4 Data collection and analysis procedures are feasible in terms of time, personnel, and resources.

Efficiently handled within resources.	Collected but seldom used because procedures are cumbersome.	Burden is on program, or not collected.

16.5 Data are easy to interpret.

Format of data analysis is clear.	Not easily interpretable.

16.6

17.0 Competency measures and standards are specified and made public prior to instruction.

Indicators: 17.1 Competency measures and standards are in a written form.

For all competency measures and standards.	Some are available.	None are written.

17.2 Competency measures and standards are specified in advance.

yes	for some	no

17.3 Students can describe competency measures and standards.

all known to them	some known	unknown to students

17.4 Procedures for demonstrating competencies are known to students and faculty.

Known to all.	Known to some.	Unknown to students.

17.5

Governance and Management

18.0 Policy statements are written to govern, in broad outline, the intended structure, content, operation and resource base of the program.

Indicators: 18.1 A formally recognized policy-making or governing body exists for the program.

A governing body is recognized as having responsibility and authority for making policies for the program.	No authority recognized to which one may turn to obtain knowledge of existing policies upon which to base program operations.

18.2 All institutions, agencies, organizations, and groups participating in the program are represented in policy decisions that affect the program.

When policies are formed all persons or groups which may be affected by those policies are represented.	No policies or policies made by one group.

18.3 Policy decisions are supported by and made after consideration of data on program effectiveness and resources required.

Data are collected, and systematically stored, and considered in reviewing, changing or creating policies.	No research base exists for policy decisions. Policies are the result of power relationships and personal opinions.

18.4 An explicit statement of policies for management and governance of the program is available to all involved or concerned.

Such a statement of policies is in printed form, current and frequently referred to by persons involved in management or governance of the program.	There appears to be no orderly statements of policies available to persons involved in management or governance of the program.

18.5 Associated with the statement of policies for management and governance of the program is a list of the competencies specified to be demonstrated for exit from the program.

There exists a manual or handbook which presents statements of competencies specified to be demonstrated for exit accompanied by interpretative narrative.	The expected outcomes of the program are not clearly available even in general statements.

18.6 Policies, organization, and management procedures are readily modified and regularly reviewed.

Process known to all; review process regular.	No known governance structure or a rigid, unmodifiable one.

18.7

19.0 Management functions, responsibilities, procedures and mechanisms are clearly defined and made explicit.

Indicators: 19.1 Management decisions reflect stated program philosophy and policy.

When management decisions are made, the decision is accompanied by a rationale which cites the program policies and/or assumptions upon which the decisions are made.	When decisions are made they are primarily forced by urgent conditions and represent an arbitrary solution derived from political rather than rational interaction.

19.2 The person or group with responsibility for decision-making has the authority and resources to implement the decision.

No person or group is required to implement a management decision unless provided with the authority and resources needed to fulfill the requirements of the decision.	Frequently persons or groups are asked to implement plans for which they have neither the resources nor the authority.

19.3 Program management and governance operations are designed to model the characteristics desired of schools and classroom in which program graduates will teach.

The criteria established for the management and governance of the teacher education program represents the kind of management and governance program which would be desirable for the schools in which the graduates are likely to teach.	The criteria used for assessing the management and governance of the teacher education program differ from those thought suitable for the schools in which the graduates are likely to teach.

19.4 Job definitions, staff selection, and job assignment responsibilities carried out by the same management-governance teams who are entrusted with other management-governance functions.

The preparation of job descriptions, the selection of staff and the assignment of personnel to tasks is a function of the management-governance team.	Various individuals in management are entrusted with various management functions. There is little or no attempt to coordinate.

19.5 Formally recognized procedures and mechanisms exist for arriving at the various levels of program management decisions.

Procedures for program management decisions and made public, used consistently, and acceptable to all involved.	Procedures for program management decisions are inconsistently followed.

19.6

Total Program

20.0 Program staff attempt to model the attitudes and behaviors desired of students in the program.

Indicators: 20.1 Faculty and staff meet regularly to work as teams.

Always	Sometimes	Never

20.2 Staff treats students with the respect and concern for support which is of the same high quality expected of graduates with their relation to school pupils.

Always	Sometimes	Never

20.3 Staff members openly share differences of philosophy and social positions so that students see the appropriateness and strength in diversity.

Always	Sometimes	Never

20.4 Instructional staff use the CBE principles in their own teaching.

Yes	No

20.5

21.0 Provisions are made for staff orientation, assessment, improvement, and reward.

Indicators: 21.1 Personnel training programs are competency-based.

Improvement of program personnel is through a CBE designed system.	Isolated activities.	No organized training program.

21.2 Evaluation profiles are kept on all staff and made available to them.

Yes No

21.3 Faculty reward structure consistent with CBE role descriptions, requirements and developement.

Yes No

21.4 Staff development activities are recognized as important as teaching, research, and publication.

Yes No

21.5

22.0 Research and dissemination activities are an integral part of the total instructional system.

Indicators: 22.1 A research strategy for validating and revising the program is operational.

Written procedures, hypotheses, date; systematically applied.	Some efforts to study results of program.	Not being done.

22.2 Reports of completed studies are used in revising program.

Numerous written reports available, used.	Data or unwritten reports available.	No reports.

22.3 Research management system is operational.

Yes, comprehensive, workable, working.	Some processes, not systematic.	Not operational.

22.4 Procedures for sharing results with other programs and for obtaining their reports are operational.

Regularly shares with at least two programs, some sharing with ten others.	Haphazard sharing of results with other programs.	No relationship other than casual ones.

22.5 Staff can describe the research strategy, on-going studies, and conclusions of previous efforts.

All staff	Some	Only for studies he is engaged in.

22.6

23.0 Institutional flexibility is sufficient for all aspects of the program.

Indicators: 23.1 Resource allocation is based on student outcomes rather than course competencies.

Resources allocation determined by objectives completed by students.	Resources allocated by course enrollments.

23.2 Additional resources (personnel, materials, facilities, funds) are provided for program development.

30% or more increase for program design.	15% increase in resources (personnel and dollars).	None

23.3 Resources are contributed by all consortium members (school districts, colleges, professions) to collaborative effort beyond individual institutional needs.

All partners contribute funds and personnel to build consortium.	At least one institution provides additional funds.	No additional funds provided.

23.4 Course, grading, and program revision procedures support the tentativeness necessary to compliment the program.

Changes readily accepted on experimental basis.	Involved procedures and numerous authorizations by committees or administrators necessary for changes.	No changes possible.

23.5

24.0 The program is planned and operated as a totally unified, integrated system.

Indicators: 24.1 The program was planned as a totally integrated system.

Total program designed prior to independent parts.	Courses compiled into a program.	Independent parts grouped together and called a program.

24.2 The program is operated as a system.

Decisions reflect consideration of the total system.	Many isolated independent decisions.

24.3 Management is by objectives.

Yes	Somewhat	No

24.4 Evaluation system provides continual feedback to assess objectives achievement for various sub-systems.

Data available and used. Program revised.	Data occasionally used.	None operational.

24.5 When making decisions on one phase of the program, impact on other sub-systems is calculated and considered.

Always	Sometimes	Never

24.6 The sub-systems are continually being modified.

Yes	Somewhat	No

24.7 Harmony in principles among various sub-systems is apparent.

Internal consistency easily apparent.	Consistency can be generally identified.	No consistency, or not considered.

24.8 The program is continually evaluated against the actual professional needs, and refined based on feedback.

Formal review structure operational; changes continually being considered.	Program not amenable to modification.

24.9

ANALYSIS OF THE INSTRUMENT

INTRODUCTION

This section is designed to help the reader understand the various criteria, the indicators one may expect to find which support the criteria, and the rationale behind the authors' inclusion of some aspects and exclusion of others vis-a-vis the criteria. For each of the criteria, this section includes (a) the criterion statement; (b) the indicators for that criterion; and (c) a discussion of the criterion, the indicators and the authors' rationale. The intent of the section is to allow the reader to consider the criteria from the same perspective of the authors. The authors would be quite concerned if this discussion, in any way, would limit the reader from the variety of possibilities for use which might be imagined for an individual criterion or the criteria as a group.

COMPETENCY SPECIFICATIONS

Six of the criteria describe competency specifications which speak not to operational aspects of the program but to how competency statements are determined, written, measured and used. The analysis contained in this part includes implications for the public nature of competencies and the flexibility necessary in "requiring" competence.

1.0 Competencies are based on an analysis of the professional role(s) and/or a theoretical formulation of professional responsibilities.

This criterion examines how competencies are determined. The basic contrast that is made is between traditional curriculum designs and the competency-based curriculum design. The principal distinction is that the latter is the result of an analysis of the professional role of practitioners for which CBE students are being trained.

Traditionally, professional educational programs are designed by educators who draw upon their expertise as defined by an academic subject area (e.g., anatomy, physics, and literature or even so precisely defined as human anatomy, thermal dynamics, and 17th-century English poetry). What the student learns in traditional programs may or may not possess specific relevance to professional practice, and the total program may or may not be coordinated for maximum learning efficiency. Often decisions made about curriculum requirements have little justification beyond the fact that "our students always take 'X' subject of Professor 'Y's' course." As such, these decisions exude an aura of the initiation rite.

CBE, however, emphasizes the connection between professional competence and the specification of trainee learning experiences. The analysis of professional responsibilities, therefore, is a prerequisite for curricular decisions. Some areas of professional activity may not admit to precise analysis; yet even in such cases theoretical formulations of these areas can be made consistent with the total professional role definition. Based on professional descriptors (whether pragmatic or theoretical), a rationale can be written which communicates a professional training program's purpose and goals. The rationale provides the students of the program, the public supporting the program, and the faculty conducting the program with a clear exposition of the program's objectives. Hidden agendas within the professional training will disappear. Students will know what is expected of them prior to entry in the program. Public support can be based on informed commitment to the objectives. Faculty will know the contribution they make to the program and how it connects with the total design.

The writing out of competency statements as the foundation of the curriculum plan achieves the benefits of both curricular precision and programmatic integration. Questions of the relevance of each part are answered as the parts fit into the total plan. The totality of the instruction system

possesses a concreteness expressed in distinct competency statements. The final result is a high order of curriculum specification which avoids either the phony idealism and platitudes which characterize most catalogue descriptions of training programs or the fragmentary collection of disparate pieces of instruction.

One of the underlying assumptions of competency-based programs is that the selection of competencies is made through a process in which all major participants in the profession contribute to determining what constitutes a valid competency. For the teaching profession such participants would include university faculty, practicing teachers, administrators -- both university and school, students and the general public. All parties and all sources must be sought to assure an adequate generalizable analysis of job definition. This assumption has consequences in the systemic design of a CBE program which are discussed under other criteria statements; for example, student placement in cooperating field centers is viewed as not only a way by which students practice and demonstrate certain competencies but also as a means of validating the competency statements and providing data for their revision. Since no decision is made in isolation from other components of the program, the design of the management system, the instructional delivery system and the research system are all affected by this assumption.

Probably the greatest consequence of the application of this criterion in the design of a curriculum is in broadening the definition of a profession. Who constitutes a professional? The concept of a practicing professional as an independent agent belonging to a "guild" of other independent agents is no longer functional in our society. It is especially true that the arrogance of knowledge and narrow specialization can no longer be acceptable to a society which demands accountability from its professionals. All persons who are affected by the practices of a professional have a right to participate in the decisions which define the profession.

The definition of professional functions cannot be left to practitioners alone. The apprentice system is dead in an age of technology. The training of professionals has to result in the creation of equitable distribution of professional services. Competency-based educational programs move the profession from the status of a clique protecting its prerogatives to that of a public system delivering its services.

2.0 Competency statements describe outcomes expected from the performance of profession-related functions, or those knowledges, skills, and attitudes thought to be essential to the performance of those functions.

Given a clear definition of the professional roles graduates are expected to perform, a CBE program delineates the instructional objectives for trainees. Objectives are stated in competency terms and are sequenced from entry level behaviors to exit criteria. While individual modules of instruction will describe learning experiences which have cognitive/knowledge objectives, and while others will describe skill acquisition exercises through simulations and other practice situations, the focus of the program remains on the outcome or terminal competencies of the professional functions. Conceptual learning and affective growth and skill development may be differentiated by separate descriptors, but the design of a CBE program is always to coordinate and orchestrate the unity of these factors in the fully functioning professional.

For example, a music teacher in a public school will need to know a great deal about music literature, the history of music, harmonics, music theory, etc. She/he will also have skills in performance, probably on more than one instrument. However, knowing much about music and knowing how to make music are still not enough. The decisive criteria for the

professional teacher resides in the capacity to transfer the musical knowledge, attitudes, and performance skills to others. Many musicians cannot teach. It is the purpose of a CBE program in music education to insure that the outcome of training is effective functioning at the learner consequence level. So as previously asserted, it is necessary that the link between professional role definition and competency statements in a training program be established and diligently maintained.

A competency-based education program focuses on the expected behavior of the pre-professional trainee as an indicator of competency, whether in entry level criteria or in exit criteria. Thus, the objectives within the program are stated in behavioral terms and are sequenced to facilitate the acquisition of knowledge, skills and attitudes. In many programs modules are used to define a specific developmental task leading to a demonstration of competency. A modular format using behavioral terms permits the adaptation of sequence and pace to trainee needs. It also breaks up the traditional, and often artificial, divisions of knowledge by academic subject area. Instead of a vertical division of the curriculum, a horizontal distribution of knowledge skills and attitudes leading to a specific competency occurs.

A competency statement describes the outcome behavior, but this standard also recognizes the fact that each behavior is incorporated into the repertoire of individual trainees who emit the behavior. So the reality of a CBE program fosters the individual appropriation of professional behavior. The program allows opportunity for the student to personally relate discrete knowledge, skills and attitudes into his/her own set of behavioral strategies. A large degree of student responsiveness is build into the program by virtue of this fact. Different student progress does, in fact, elicit different patterns of using knowledge, skill and attitudinal constructs. The result is that a CBE program constantly evaluates its criteria for mastery against trainee behavior in professional roles, rather than against some absolute, artificial standard. The recycling of the instructional program, thus, becomes a continuous process.

3.0 Competency statements facilitate criterion-referenced assessment.

One of the great advantages of a CBE program is that the evaluation/assessment of trainee performance is based upon measurable criteria rather than on standard norms. At least, this is true to the extent it is possible to describe the desirable outcomes in behavioral terms. The practice of norm-referenced assessment of student work has long been an inhibitor of student growth and even of curriculum change. A good example of norm-referenced assessment is the traditional practice of many mathematics professors who pride themselves in failing an exact percentage of students every term. Or take the case of the policy at some large state universities which have open enrollment requirements mandated by legislatures. These universities often use the large freshmen required courses, such as freshman English, as the arm of the admissions office by failing ("weeding out") students in fixed quantities. Some norms may be useful, but in most cases they are established by reasons other than meeting students' needs.

Criteria-referenced assessment sets performance standards that are based on realistic professional behaviors. Competency statements, therefore, describe the setting or conditions for assessment, the content of the performance, and the level of performance for acceptable professional practice. Successful achievement, as a result, is based upon a trainee's meeting the prescribed professional criteria, rather than upon his competing against fellow trainees to be accepted into the arbitrary percentage of "those who passed."

When has someone learned enough? The wise have always told us that the answer to that question is "never." The range of human achievement is vast, so that when considering professional standards, it is necessary to state criteria with a high degree of behavioral specificity. At the same time, it is equally important to recognize the variability in each trainee's display of the specified behavior. For this reason, CBE programs are individualized by definition. As the criteria of a competency list not only what is done, but also the conditions and the level of performance, so the "gestalt" of the performance for each trainee is considered in the assessment. The individual student's performance profile contains the evidence of individual work; so a norm-referenced grading system is not appropriate.

Nowhere is the evaluation of teacher performance more difficult than in the area of interests, attitudes and values - the affective domain? And yet the evidence from research suggests that the quality of teaching is directly related to positive attitudes toward self and the world. The criteria for assessing teachers, and thus teacher trainees, must include statements which relate to attitudes, beliefs and feelings; in fact, the whole range of valued meaning in a teaching task is as important as the observable behavior. A CBE program makes it possible to encourage the development of trainee sensitivity to this level of action by providing for individualization in both task definition and task reporting/recall. Unless the trainees are made partners in this process, this level of self-assessment just won't happen. Likewise, unless a program makes explicit its values, beliefs and feelings about the quality of human life, students will have no guide in the struggle for self-growth.

4.0 Competencies are treated as tentative predictors of professional effectiveness, and subjected to continual validation procedures.

A CBE program, to the extent possible, bases its design, operation and output upon empirical evidence linked to professional function. Given this goal, a CBE program treats the competency descriptors as tools by which predictions of successful professional function may be made. The existing evidence of contextual and/or empirical support of a given competency statement does not negate the importance of continual validation. That is, a given competency may be generally supported by the professional opinion/judgment of its importance, and there may be research studies which reinforce the competency's essentiality to professional practice. But, as trainees move into professional roles, a continual process of measuring the actual importance/use of the competence in practice is maintained. From such data, a given competency may be more accurately described or otherwise modified as a training objective.

Predictability, in this statement, is not used so much in the statistical sense, but rather in the sense of an inferential relationship that exists between the demonstrator of the competency in a preparation program and future, short or long range success as a practicing professional. Validation testing of the competencies among professionals in the field is, thus, a crucial research component of a CBE program. But even before all empirical data are in on any given competency, a priori inferences may be made as to the importance of competencies. An a priori inference is one based on a logical analysis, rather than "hard data" research results. The inference can be based on analysis of job definition and/or a theoretical formulation of professional responsibilities. As research data become available they would be used. However, the lack of research data will not deter the preparation of competency statements.

An example of the regenerative feature of CBE programs is the Toledo model. Formative evaluation is built into the Toledo model's procedures through the Assessment/Revision Committee whose three major concerns are the operation of the information management system to insure the continual collection and dissemination of data, the supervision of

programmatic research, and the design and implementation of formative and summative evaluation. Special ad hoc groups are formed to aid in formative evaluation, at both the elementary and secondary levels.

At Florida International University student performance data and student attitude data are collected on all modules, tasks and enablers each quarter. These data are used to revise and refine competency statements, module packages, etc. The internal validation question being answered is, "Are the students actually acquiring and demonstrating the prespecified competencies?" As a result of such built-in systems, CBE programs can effect change in different program areas on an on-going, routine basis of operation.

5.0 Competencies are specified and made public prior to instruction.

A CBE program is characterized by an integrated design of learning activities based on clearly described competency statements. The competency statements specify performance levels for trainee evaluation and are known to everyone. The applicant to the program can, therefore, know in advance of entry what will be expected of him. While a CBE program can permit considerable flexibility for student negotiation of optional/alternative learning experiences, the non-negotiable competencies are easily identified by trainers and trainees alike. This fact increases the effectiveness of the training and the morale of the trainees. No hidden agendas are practiced upon the students. Instructors know the objectives of not only their own area of teaching responsibility, but also of their colleagues. As a result, advisement, student self-assessment of progress, and program effectiveness are greatly enhanced.

Students and faculty of a CBE program have access to information about the total operation of the program. Students learn as they enter the program, through intensive orientation, the structure, functions and operational procedures. They know in advance the objectives and criteria for assessment for each part of the program. The faculty also knows what to expect from their colleagues and what their colleagues expect from them. In contrast, many traditional programs make a fetish of secrecy under the guise of "academic freedom." Such closed door policies often cover up sloppy planning and ineffective teaching. In spite of what the catalogue may say about a course, many professors teach what they please in their classes. For example, at one major university it was discovered - only by inadvertence - that three graduate courses in a sequence of required courses all had required the reading of Future Shock during the first year of that book's popularity. Who really knows what goes on in another professor's course in the traditional curriculum? How does a student know what he/she is getting into when the course begins? While student evaluations and underground course descriptions are filling the gap on some campuses, there would be no gap in professional training programs which operation on CBE principles.

6.0 Learners completing the CBE program demonstrate a wide range of competency profiles.

When a trainee in a CBE program graduates, instead of having a list of courses and a grade point average as the evidence of his competency, he has a portfolio describing his demonstrated competence in both required and optional areas. A competency profile of the program graduate could be drawn from the primary evidence of his performance at specific tasks; in many cases this evidence could include the assessed product itself - a paper, a media program, a video record of a task performance, etc. Potential employers of CBE program graduates have a more accurate index of the professional capability of job applicants.

During training, the individual learner profits from the flexibility made possible by the competency-based instructional design. Demonstrating competence in areas of strength may be quickly accomplished, permitting greater attention to areas of student weakness. The individual needs of the learner can dictate the allocation of time and resources within the program. Likewise as requirements are met, optional experiences can provide a broadening and deepening of learner proficiency.

INSTRUCTION

Because instruction is the main business of any educational program, the criteria for the instruction subsystem are among the most important. In CBE, these criteria reflect system, order and direction. When contrasted with more common programs, it is found that CBE is not centered around a variety of learning experiences as is the activity program. Nor is instruction incidental or derived from the expressed wishes of the learners. Unlike the subject matter approach, it avoids having its students accumulate and organize scholarly and professional knowledge on the assumption that this is the primary ingredient. CBE instruction is derived from competencies and is directed at providing learners with these same competencies. Instruction is, therefore, focused on the job to be learned. An analysis of that job provides the performances, subject matter, skills and attitudes of which the program is composed. Instruction helps the learner acquire these elements and synthesize them back into the specified competencies. The criteria which follow facilitate this process.

7.0 The instructional program is derived from and linked to specified competencies.

A competency-based program builds the design of the instructional program on the specified professional outcomes identified and expressed by competency statements. For example, if, in the judgement of some acknowledged authority, one of the professional tasks in which a teacher should demonstrate competency is that of designing and administering a respondent learning strategy, then several implications follow. Not only should the student in training acquire knowledge about respondent learning theory, but that student should also be able to transfer the concept to practice settings using simulations of real life characteristics. However, the test of demonstrated competence can only come in an actual classroom with pupils. It is likely that repeated practice would be required for performance demonstration. Each of these steps in acquiring the stated competency implies a programmatic need: resource material for cognitive learning of the concept, simulation settings, materials for practice, and field/laboratory contexts for demonstration in real settings. Program decisions are thus to be made on the basis of definition of the competency to be acquired. The demands of the profession are carried throughout the planning, implementation, management and evaluation of the instructional program.

It should be observed that traditional programs are often weakest at this point; namely in demonstrating relevance and the visible connection between learner outcomes and the specific activities of the day-to-day instruction. In many cases, what occurs in classrooms and seminars is dictated by factors quite unrelated to student needs or professional competence. The favorite "hobby-horse" of the instructor may be the focus of lectures. Assignments may be made on the basis of materials available or instructor familiarity, without regard to either student needs or of an integrated instructional plan. All that can be said with accuracy about traditional programs that certain quantitative events have occurred in a trainee's experience. For example, most teacher certification programs still require a given amount of time (translated by credit hours) in a given array of subjects.

The indicators concern themselves with the primary aspects of the instructional program other than the competencies themselves. The indicators focus on content, learning activities and the evaluation of student progress.

8.0 Instruction which supports competency development is organized into units of manageable size.

The most common term in CBE for "units of manageable size" is module. A module is an identifiable unit of instruction which logically would facilitate the performance of one or more competencies. A module may be represented by a collection of (1) facts, definitions and concepts about some phenomena; (2) skills to be acquired; or (3) attitudes or values with which certain essential competencies can be implemented.

Because a module may be large or small, the term "manageable size" needs further clarification. This can be done best by contrasting CBE practices with common practices. In common practice the teaching unit is a standard length of time. There is some measure of flexibility in this practice. For example, a course is normally measured by some multiple of the academic semester or quarter hour. It is normally divided into subject units. It is common practice to divide a course into a number of subject units on the basis of the number of weeks the course is offered. Sometimes a unit is one week; at other times it may be two weeks in length. There are other variations, but all are based on time. Competency-based education assumes that the managers of learning can select the enablers in such a manner that the assortment selected for the instructional learning unit has identity in terms of the competency to be acquired and at the same time is compact enough for the student to grasp conceptually. In addition, CBE places no time restrictions on the student. He may pace himself as rapidly as he is capable and he may move as slowly as he needs.

This criterion considers the extent to which the size of a unit is determined by the program variables, conventional time units, and student progress evaluation needs. Attention is given to the extent to which students' experiences with instructional units are considered in preparing and revising such units.

9.0 Instruction is organized and implemented so as to accommodate learner style, sequence preference, pacing and perceived needs.

No two people learn exactly alike. An instructional program which does not provide alternative modes of achieving objectives forces the trainees into the same mold. Because a CBE program is organized by the integration of competency statements, a wide range of instructional variables is available. Also, it is possible for the learner to take an active role in shaping the operational means and ends of program components.

Personal counseling is provided to help the student adapt learning alternatives to his personal styles. This is particularly desirable for teacher education programs. One of the goals of CBTE could be expressed in the competency for decision making which demands taking responsibility for one's decisions and acts. If decisive teachers are desired, then they must be prepared in settings which permit, even demand the trainee to take responsibility for his own learning activities. To make choices that attend to desired personal and professional consequences, the trainee should know himself well - his strengths and weaknesses, his interests, his biases and his affective responses to interaction stimula. CBE design makes such attention to individual differences possible.

Two terms used in the indicators for this criterion may need defining: learner select in 9.4 and preferred learning styles in 9.5. Learner select options is a term used in instructional modules to describe the provisions made for allowing the student to go about acquiring the proposed learnings in any manner he chooses. He has complete freedom to "do it on his own in his own way." If at the end he can perform then no one need question how he acquired the learning. Learners should not be held accountable both for the kind of process they go through and also for the results of that process. One or the other should be required, but not both. Preferred learning styles refers to the approach to instruction which the student chooses from his options. His reason for choosing it may only be that he thinks it is the best way. To know better whether or not his preferred approach is his best approach, the student ought to be given opportunities to examine the effect of "his" approach with others.

10.0 Learner progress is determined by demonstrated competency.

The individual trainee in a CBE program is judged on the basis of specific criteria linked to each competency. Careful records are maintained on each trainee, not for comparison with other trainees, but for the benefit of the learner who, with his advisor, can plan and monitor progress through the program. The question is always, "How well does the learner perform as judged by criteria which are set by the needs of the profession?" The learner then may know how well he is doing in approaching professional standards of performance, rather than how he compares with other trainees.

With the exception of the first one, the indicators for this criterion all relate either directly or indirectly to those characteristics which affect learning. The first emphasizes the need for the student to be fully aware of its nature and that of the criteria for its performance. The others focus upon the necessity for an individual to be aware of his progress, for the use of individual student progress to provide program direction, for the utilization of individual progress as the criterion for success, and for a management systems which allows individuals to vary in their rate of progress.

His progress in the program is determined by his demonstration of the objectives specified for each phase of the program, and his completion is judged by the competencies specified. This contrasts with programs where the student is held accountable for participating in certain activities. Some CBTE programs combine the two, holding the student responsible for working a certain period as a teacher aide or intern, but the major criteria for completing the program are not related to whether or not he worked so long as an aide, but whether he can demonstrate the expected competencies.

11.0 The extent of learner's progress in demonstrating competencies is made known to him throughout the program.

The learner has access to all records related to his progress in the training program. The evaluation process thus is an intregal part of the instructional program. Learner records are regularly reviewed with the learner and kept current. Group data are available to the instructional staff and the general public, but the personal achievement records of individuals are kept confidential. Evaluative comments, observations, letters are placed in a trainees file which are: (1) based on stated criteria and (2) revealed to the trainee by name of the evaluator. Not only is the trainee expected to be responsible for his judgements, decisions and acts, but the faculty also are expected to assume responsibility for the integrity of the data.

If one can check positively each of the indicators, then:

1. there are adequate records of progress which are available to all concerned
2. the student has frequent opportunity to discuss his progress with those most knowledgeable
3. his records are updated on a continuing basis
4. he is helped to develop the skills to make his own analyses of his own progress which should serve him well as he advances in the profession.

12.0 Instructional specifications are reviewed and revised based on learner feedback data.

Since the purpose of instruction is to facilitate learner demonstration of competencies, the effectiveness and efficiency with which the instructional program functions is of primary importance. Each part of the program, each instructional option is assessed continually in terms of (a) the extent to which learners select it, (b) the time required by learners to complete the option, (c) the time of staff in supporting the option, (d) program resources needed to support the option, (e) the relation of this option to others in the program, (f) extent to which the option leads to learner demonstration of objectives, and (g) learner attitude toward instructional option and the objective it leads toward.

To collect these data and to use them in revisions of the instructional program, a systematic process is designed and maintained. Students react to each portion of the program. Data on achievement are maintained. Validity data are collected. Procedures for collecting them are known to students and faculty. A regularized procedure is maintained for considering these data and for revising the program.

One of the significant strengths of the CBE design for instruction is the criteria by which the components of the program are assessed by reference to learner feedback. Program effectiveness may be judged by many standards, but surely one is the consequence upon learners. Affective responses of learners as well as cognitive functions are weighed. If a component is found to have undesirable consequences upon the learners (e.g., takes too long, displaces other effects, bores or irritates learners, is dangerous to participants, or is insignificant, etc.), the component may be dropped completely or modified in some way to avoid the difficulties. While learner feedback is not the only variable to consider in the revision of instruction, it is one of the major concerns.

ASSESSMENT

The next five criteria focus the attention of the user upon the assessment procedures and competency measures which are a necessary part of any CBE program. The criteria not only describe items reflecting validity and reliability concerns but also contains implications for the determination of "levels" of demonstrations, the data, their management and usefulness, and the public nature of the measures.

13.0 Competency measures are related validly to competency statements.

The extent to which the measures of a competency are congruent with the competency (validity) is an important dimension in a CBE program. Establishing validity, particularly in a CBE program is not easy; as a result, many persons and programs choose not to deal with it directly. Validity is assumed.

Competencies are not measured directly. Indicators of a competency are measured, with the degree of logical relationship referred to as the validity of the measure.

With more simple measures, such as the length of a board, we refer to a characteristic or property (length) rather than to the board itself. Further, it is this property that is measured. Simpler properties such as length, weight, or size are more readily identified than those found in education (achievement, attitude, ability, etc.) where the inferences are much greater. The latter require indirect means of assessment while the board was directly measured. Responses to a set of problems are used as indicators of educational achievement or ability. They certainly do not measure intelligence, but persons who are judged intelligent generally score higher than persons judged less intelligent.

CBE program measures require indirect measures of competence. Because of the central mode in CBE competency statements and their measures, the congruence of measuring and competencies is vital. Assessment procedures can be logically derived from and related to competency statements. This implies several indicators. First, the competency statement (or objective) is clear and unambigious. Second, the mode of assessment logically relates to the type of competency or objective specified. For example, cognitive objectives can be assessed through paper and pencil responses, but performance criteria demand instruments such as check-lists, rating scales, event flows, or other performance descriptions. Consequence criteria would require measurement of student rather than teacher activity or products.

Consider the competency statement: "The teacher gives clear, concise directions." Certainly this relates to verbal interaction, and perhaps somewhat indirectly to the Flanders Interaction Analysis system, but it is not the most logically-related measure of the competency. Verbatim transcripts of directions which can be analyzed for clarity and unambigiousness are one measure. Describing student response (number and type of questions asked about the direction or extent to which pupils followed the direction or pupil understanding of the directions as elicited in interviews) provides indicators of the competency which can be measured.

In this criterion, two terms may need defining. Competency Measures refers to the instruments, procedures, and criteria used to determine competency. They may include lists of indicators and instruments for measuring indicators of the competency. Validity typically includes both content and construct validity.

To ascertain the extent to which measures are valid with respect to competencies, the following should be collected: (1) list of competency statements, (2) list(s) of indicators, and (3) measuring instruments. When it is not feasible to assess initially all measures of competencies, a randomly selected set of competencies can be drawn, with their supporting list of indicators and instruments. For each competency, specific instruments and procedures should be available for review.

The rater's judgement on each of the indicators should be based on the logical relationship of instruments to indicators and instruments to competencies. The explicitness of this relationship also bears on the deliberations.

14.0 Competency measures are specific, realistic, and sensitive to nuance.

While the previous criterion concerned the validity of performance measures, this one probes the extent to which they are reliable. Reliability deals with how a characteristic is measured. In CBE, behaviors are sampled. If the procedures are not adequate nor appropriate, the results will be specious -- another sample would yield different results. Reliability can be improved at least in few ways: (1) Write each item in the instrument

unambiguously. Ambiguous items decrease reliability since different people interpret it differently. (2) Add more items of equal quality. This decreases changes of random errors, but increases the time required to collect data. (3) Clear and standard instructions tend to reduce errors of measurement. (4) Administration of instruments under standard, well-controlled conditions increases reliability.[1]

This criterion goes beyond standard tests of reliability to probe the extent to which the item is sensitive to various settings. For example, is it sensitive to differences between high and low socio-economic area school settings, between high school and elementary schools, etc. The name of indicators of competency will contribute to the increased sensitivity of competency instruments. Further, the extent to which data collection procedures and content are specifically defined will contribute to sensitivity.

Data collection can become a proverbial millstone around the CBE neck, however. Students can expend tremendous emotional and physical energy taking pre- and post-tests. This criterion asks that this issue be addressed; that the extensiveness of testing procedures be identified and that judgements be made about how realistic they are. While reliability may be increased with more extensive data, realistic expectations from students and staff must be considered.

This criterion refers both to instruments and procedures of assessment, which are specifically written, realistic in terms of time available for assessment and settings employed, and sensitive to varying environments and situations.

To assess this criterion, evaluators may wish to apply the above indicators to the same measures as used in 13.0. If all assessment procedures are subjected to review in 13.0, then all might be included in assessing this criterion. More likely, only a sample would be drawn for review in relation to both criteria.

In addition, are any data available which indicate the amount of time students and staff devote to pre-assessments? To post-assessments? To their attitudes toward CBE evaluation? If such data are not available, data collection is in order. (1) How long does it require to complete the sample instruments? (2) Based on extrapolation, about how much time would a student spend in his program on pre-assessment and post-assessment? (3) What proportion of his total program does this represent? (4) What range of deviations might be expected from students of varying abilities? (5) What scoring resources are required to process? (6) To what extent are assessment procedures known to students and staff? (7) How much faculty time is devoted to pre- and post-assessment? (8) Are special facilities or resources required (such as public school setting on a simulation carrel)? To what extent are they available when needed? Are special arrangements required and what steps must be taken to secure them? (9) Can specific instrumentation be identified for specific competencies? (10) Given a range of performance settings, to what extent do instruments account for variances? (11) Are regular review sessions held to review and improve instruments?

15.0 Competency measures discriminate on the basis of standards set for competency demonstration.

In CBE programs, not only is an expected behavior identified but also an acceptable standard of performance. Some programs have progressed beyond this to multiple levels.

[1]Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, 1964), pp. 442-3.

TC - Total Mastery indicating the highest level of performance in our program, is equivalent to Proficiency in another program.

AC - Acceptable Competency allows for progress in the program and is comparable to Competent.

NC - Not Competent requires recycling prior to proceeding to other phases of the program.

Whether as a single standard or multiple standards, it is vital that competency measures be of such a nature that they provide data relative to achievement of standards. The standard then is the acceptable level of performance for competency.

Standards may be contextual. Student reactions required of a competency may vary between secondary and primary schools and between urban and suburban schools. Thus, for maintaining quality standards, more vigorous application may be required in one setting than in another. Standards are, however, established prior to, not following, competency demonstration.

Measures of competence often provide normative data -- that is, a range of levels of competency demonstration. Acceptable performance standards are then set and adhered to. These should be based on theory or data, and should be alterable in individual cases to achieve uniform quality control even though the context of competency demonstration may change. The same competency measures as were evaluated in 13.0 and 14.0, above, should be considered in applying this criterion. Here, however, the focus is on the acceptable standards to be applied to acceptable demonstration of the competency. The evaluation of this criterion raises questions such as: (1) How were standards established? (2) How are they modified? (3) Can they be changed in individual cases? (4) If changed, do they still reflect the same level of quality -- that is, -- would the individual probably have been able to meet the original standards under originally controlled conditions? (5) Are variables controlled as much as possible in competency demonstration? (6) Are standards based on any valid reasons or data? (7) Do standards adequately reflect the competency itself?

Interviews with developers may be required to collect data on this criterion. In these interviews it is necessary to focus on standards rather than competencies or measures. The latter are so pervasive that they tend to interfere with the standards question.

16.0 Data provided by competency measures are manageable and useful in decision making.

Decisions made on the basis of data are important to CBE. Each student and his advisor examine data on his performance and make decisions relative to his progress in the program. Program designers examine achievement and attitude data of students relative to particular parts of the program and revise objectives and instructional activities on the basis of data. Program managers consider data relative to time and other resource expenditures of students and faculty in relation to outcomes and modify program thrusts, dimensions, and procedures on the basis of evidence.

The way in which data provided by competency measures is collected and reported determines to a large extent its usefulness. Raw data are seldom useful; properly displayed analyses of data require forethought and time to adequately handle. Considerable thought

must be given to major decisions which need to be made - by whom they should be made, and what information is required to make the decision.

Collecting data just to have it is as useless as having no data at all. The questions are: Is it useful and is it used?

Computer storage of data may be helpful in the process but is not necessary. The criterion to be applied in making this decision is one of the feasibility and whether or not computer storage facilitated the decision making process.

As students demonstrate competencies and sub-competencies, the data on their performance is useful to themselves as they make decisions, to program designers, instructors, and managers. This criterion probes the extent to which these data are useful and used.

In assessing the extent to which a CBE program uses data in making decisions, evaluators attempt to determine if data are collected, how they are stored, how they are made available to decision makers, who uses the data, how they are used and for what purpose. They examine raw data from compiled reports and trace the data collection-storage-analysis-interpretation cycle for a specific set of data to ascertain the efficiency of the system. The evaluators interview data users -- students, faculty, program designers, program managers -- to determine their perceptions and experiences with data in decision making, and to determine the extent to which data are used.

Probes are made in two areas: (1) Are probable decisions and decision points known in advance with data collection geared to facilitate decisions; and (2) to what extent could the system respond if the evaluation team requested a particular set of data or an analysis based on known collected data?

17.0 Competency measures and standards are specified and made public prior to instruction.

This criterion goes in tandem with 5.0 which requires that competencies be specified and made public prior to instructions. CBE is an open system; it is a success-oriented system; it is a learner-oriented system. Thus, it is logical that the requirements of the programs will be known in advance both to students and to faculty. The purpose of both criteria is to facilitate student achievement of competencies; research has consistently supported the thesis that man is goal-seeking and that he is more likely to achieve goals when they are specific and known to him.

Making competency measures and standards known to a student does not imply that the specific questions on a test or behaviors on an observation scale which sample competency will be known. This is particularly important with respect to affective objectives, where indicators, if known, might be mechanically performed only to meet short-range needs rather than long-term, more pervasive competencies.

This criterion also reflects known assessment procedures and time-lines. It implies that a description of assessment measures be available to students, and that they know about them. "Competency measures" refers to assessment instruments, indicators, procedures for administering and processing, and analysis, while "standards" refer to the acceptable level of competency demonstration. "Public" is a word used in many different ways. In this criterion, it refers only to those people who are involved in the assessment process -- primarily, this includes students, university faculty perhaps public school teachers, and program designers. The time dimension, "prior to instruction," was included to

preclude delineation of measures and standards after they were demonstrated. Any other time-frame referent is acceptable so long as both the student and instructor have access to them at the time the student first engages in the process of competency attainment or demonstration.

Interviews with students are helpful in collecting data on this criterion. The extent of their understanding of program expectations and how they go about demonstrating competencies can be assessed by inquiring about their current and future program objectives and activities. Do they, in fact, understand what procedures they will follow and what criteria will be applied to successful completion in the program.

In a survey of program resources, are documents available which describe for students competency measures and standards? Are these clear and understandable? Do they provide direction to the student negotiating his way to competence? Are documents available to all? Are there some documents of a technical nature which support specific assessment techniques and are available only to staff?

Governance and Management

In CBE programs, governance and management are closely related. Governance refers to the controlling, regulating and directing of program operations; it deals with the policies and processes which keep the system functioning. Program management refers to administering and supervising the activities of the program in accord with policy and includes responsibilities for facilitating operations by processing needed resources such as equipment, personnel and materials. Because they are interdependent, one cannot function effectively without the other, and thus frequently the two terms are interchanged in applied situations.

The following criteria highlights the functions of governance and management which specifically related to CBE operations.

18.0 Policy statements are written to govern, in broad outline, the intended structure, content, operation and resource base of the program.

Statements of policies are operational guidelines. In a competency-based program probably the most important are those that set forth the exit standards or the competencies that the educational program is designed to help prospective teachers acquire.

Other policies concern the organizational structure. Although different types of structure may exist, the primary criterion of effectiveness of any one is the extent to which it facilitates learners' acquisition of the target competencies.

The term "content" is also a broadly conceived term. Thus, policies concerning content may refer to anything that has been put into the instructional program for the purpose of fulfilling the over-all mission. On the one hand, content might include learning materials such as literature and audio-visual aides. On the other hand, it might refer to practical experience in field centers. In all cases however, content includes both teaching competencies and their enablers, such as subject matter, communication skills, and attitudes.

The source base of the program may be either a limiting or extending force. Resources are the available time, talent and effort that all personnel are willing to release to the training program. Also included are the real materials and equipment that are required to implement the program.

The indicators relative to the criterion of policy statements reflect the concerns expressed in the statement itself and in the introductory discussion. They are the availability of three statements: an explicit statement of policies; a statement specifying the competencies to be demonstrated for exit; and a statement explaining intended structure, content, operation and resource base of the program.

In order for policy decisions to be made, certain procedures and mechanisms must exist. Because these procedures and mechanisms may vary in nature among programs, they must be understood and recognized by all persons concerned. Also, every educational program must have some source of authority. Competency-based educational programs are no exception. Thus, some governing body such as an advisory board or executive committee is created and is formally acknowledged as having this function.

In a competency-based program it is regarded as necessary for all persons or agencies affected by the program to have a participatory role in determining program policies. This is to say that a teacher education program may no longer be considered the special domain of the state department of education or that of the college of education at a university. These are only two of many partners of a consortium concerned with teacher education. Also included are teachers, school administrators, professional organizations, teachers' unions, community organizations and the students themselves.

Program evaluation data are used to determine and/or to validate policy decisions. This criterion therefore regards program evaluation as an integral function of all CBE programs. The criterion assumes that program evaluation procedures begin by examining the discrepancies between desired outcomes and real outcomes. Should the program have met the demands of the mission, then it would be "an effective program in the sense that the objectives were attained." However, there are other considerations. One must ask, "Was it worth it?" If achieving the objectives is too costly in terms of what is produced, then some modification of change must be undertaken. On the other hand, more economical means of fulfilling the mission may be created or discovered. The "costing out" of policy decisions enables appropriate conservation of available resources in terms of the desired goals.

The indicators are all interrelated. When considered collectively, they demand more specificity of concern than is immediately evident. For example 18.1 calls for a governing body. This means a group of individuals. The next criterion (18.2) details the nature of this group. It must include more than the "traditional leadership;" it includes the instructors, counselors, cooperating personnel and also the students for whom the program is designed, the community which it serves, and the professional organizations which it affects. The first and second indicators suggest that the "data on program effectiveness and resources required" (in 18.3) means the identification of numerous concerns including not only that of student progress but concern for such broader assessment factors as quality control, cost effectiveness and discrepancy analysis.

19.0 Management functions, responsibilities, procedures and mechanisms are clearly defined and made explicit.

This criterion holds that a CBE program should have a complete and consistent statement of policy that is made available to all individuals or groups within the system. It further holds that, whenever decisions are required, a systematic consideration be made of existing policy so that decisions are consistent with that policy.

In any system some roles reflect more the responsibility for establishing policy than that of implementing it; other roles are more concerned with carrying out policy than establishing it. This criterion suggests that competency-based programs clearly specify (set down in written form) the procedures by which the various levels of program management decisions are made. It also requires that the mechanisms used to operationalize these procedures be clearly communicated to all involved.

CBE programs reflect concern for the conservation of resources. Any decisions made with regard to management must take into consideration what knowledge is available at the time with regard to the objectives and the resources that are needed to satisfy them. In short, competency-based teacher educational programs are required to reflect consistent concern for obtaining the most effective results in relation to the input with which the system is entrusted.

Program management and governance in CBE should be designed so as to reflect the characteristics of an exemplary model of school management. Most CBE programs require job definitions or statements which describe responsibilities and activities for particular jobs that are carried out within the system. Staff selection proceeds on the basis of these job descriptions. All of these tools and processes are directly linked to the policies regarding levels of management responsibility or authority.

The five indicators associated with the criterion depict a variety of concerns for anyone who seeks to determine the level of performance of a teacher education program which calls itself competency based. The indicators lead us to an examination of program philosophy and policy, decision responsibility, job definitions, staff selection procedures and levels of program-management decision making.

TOTAL PROGRAM

A number of concerns of any Teacher Education program are also important in competency based programs. The criteria in this section direct attention to those areas concerned with the total operation of the program. Two direct the attention of the user to staff and staff development characteristics. One looks at research and discrimination activities. Another examines the institutional flexibility necessary for a successful program. The last, as a summary item, asks the user to step back and assess the total program as a unified integrated operation.

20.0 Program staff attempt to model the attitudes and behaviors desired of students in the program.

An institution seeking to establish a functional CBE program can do all the things recommended in this paper, and by neglecting this criterion have most of the effort come to naught. That is, a program can be modularized, individualized, field based and systemically designed and managed, but without the staff modeling the characteristics of competent, humanistic teaching which underpin the CBE design, the impact on students will be diffused and corrupted. The age-old injunction to "practice what we preach" is especially pertinent in a CBE program.

So the strength of the CBE program can, in many cases, be measured by the degree to which student contact staff display the skills the program seeks to teach. By staff, we refer to all staff. How many times can students be turned away by a secretary's autocratic tone, and not get the message that they are unimportant? How often can instructors get

so busy as to send out messages to students that there are more significant activities than students struggling for understanding? And what happens to students when they experience direct, authoritative "expertise" on matters of self-posing and discovery-inquiry approaches? If the staff does not function as a team, if differences aren't openly displayed and if disrespect for students permeates the program, no amount of systemic management can outweigh the negative effect.

Students in CBE programs need to experience instructional leadership which is concrete and related to life. This can be accomplished only if the staff brings to the task their full human potential and concern. While much theoretical work is useful in the training setting, the staff which consistently connects the theory with their own practice of education gains credibility.

Some may argue that this criterion is not unique to CBE programs; and of course it isn't. However, effective models are particularly crucial to CBE programs in a way they may not be to other programs. That is, due to the prominence of exit criteria in CBE programs, the definition of particular skills poses a powerful clarity. If the instructional leadership is deficient, then the student reaction is so much more open and apt to be cynical to an extreme. The phony, the buck-passer, the self-obsessed has nowhere to hide in a CBE program.

21.0 Provisions are made for staff orientation, assessment, improvement, and reward.

Many staff in CBE programs were educated using other more conventional instructional modes. As they enter CBE for the first time, orientation to new perspectives and new demands is important. The specific requirements of the CBE program, management procedures, learning commitments, resources available and other factors idiosyncratic to the program itself should also be included in new staff orientation. Further, some opportunity for staff to analyze and contribute to the revised program is needed.

Procedures for assessing the effectiveness of staff are usually part of CBE programs. Being consistent with CBE principles, these assessments are based on pre-specified objectives. Feedback from students relative to instructor effectiveness is used as part of a regular analysis procedure.

Regular staff in-service programs are planned. These are based on a needs assessment of program and instructors. These sessions are in addition to regular staff meetings designed to improved management procedures and for communication purposes.

Competency-based education programs assume change. They regard themselves as dynamic and hold that were it not for their regenerative qualities the systems would die for lack of ability to adapt. Thus one essential component of all competency-based teacher education programs is that which provides opportunities for staff to assess themselves and on the basis of this assessment to find means toward self-improvement.

22.0 Research and dissemination activities are an intergral part of the total instructional system.

The systemic concept imbedded in CBE is applied to operation of such programs. Such an approach implies clear objectives, activities designed to achieve these objectives, and assessment to determine the extent to which objectives have been achieved. A fourth and vital phase, however, is the feedback mechanism which compares results with pre-

specified objectives. It also considers immediate results in the broader perspectives of general program goals, values, and societal needs.

Much of the data employed in decision making is also useful in a research strategy to determine the extent to which practices might be extrapolated to other settings. CBE programs should periodically speculate on achievements and practices, and report data on successes and failures.

Hypotheses concerning the basic fabric of the program and its procedures should be tested through carefully designed research strategies. Such research strategy may be planned and integrated into on-going activities, but with independent and rigorous interpretation of results. Some programs have formulated a long-range research strategy based on a model of their needs.

In a developing area such as CBE, many programs are duplicating efforts. Some of this may be necessary as part of the developmental process, but much duplication could be eliminated through a profession-wide dissemination process. In focusing on a single program, the question is the extent to which objectives and practices of the program are based on knowledge of other programs and of research, and the extent to which this program shares its own findings.

In this context, research refers to studies of the on-going programs and can include product engineering studies (i.e., attitude and achievement of students using a module, sequence of instructional events, etc.); competency validity studies (relation of competency demonstration to effective teaching?); institutional change studies; and studies of assessment instruments and procedures. Such studies may be conducted under rigidly controlled conditions or in field settings. They result in reports which lead to revised program operation or to an increased professional knowledge base.

Such studies are formulated by the persons involved in program design and implementation, and results are disseminated to them and to others who are interested or concerned.

Conducting such studies is part of a total conceptualization of the program development and refinement sequence. It is considered internal to, rather than an appendage of, the program.

Judging this criterion requires the collection and analysis of studies conducted on the program. Is there an over-all research strategy? Are data systematically collected? Are relevant conditions accounted for? Is there a regularly functioning group who accept responsibility for research activities? Have hypotheses been generated? Are reports of research available? Do program people know about and use such studies in design and revision activities? Have they been disseminated?

23.0 Institutional flexibility is sufficient for all aspects of the program.

CBE is somewhat like the nose of the camel poked under the tent -- it carries with it numerous other obligations, less obvious but equally demanding. And, soon the whole camel is in the tent. Pre-specified objectives for students imply pre-specified goals and objectives for the program and the institution. The emphasis on competencies implies that the program is non-time based. It also implies a "yes - not yet" concept of grading which relates to objectives rather than to norms established by student body achievement. The emphasis on objectives implies alternative instructional strategies -- not a regularly schedules class period. It implies instruction that is appropriate for objective achievement. It implies differentiated staffing patterns, teaming, group determination of appropriate

goals and objectives, student involvement in decision making, and more extensive and intensive advisor counseling. It implies closer working relations with schools, involvement of school people in objective and instructional specifications, and a consortium management system. It implies a more open and introspective institutional system.

Many institutional values held for years conflict with CBE thrusts. Grading is norm-based not criterion-based. The public expects A, B, and C grades. Semesters and quarters segment the calendar and define when work is to be accomplished. State supported universities typically are funded according to the number of enrolled each semester -- time and student head count are the building blocks of their financial structure and the reward system of faculty often depends upon "referenced journal articles" published. Management systems are typically line-and-staff while CBE implies matrix management concepts where objectives and program-specific thrusts are used to disseminate resources rather than previous commitments.

Thus, CBE designers often are frustrated by "the system" which tends to maintain its current practices that are in turn often not appropriate for CBE. This criterion, then, focuses on the institutional and inter-institutional setting for the CBE program. It considers the extent to which the institution is flexible as it deals with needed modifications to accommodate CBE. It examines process, people (administrators, committees) and organization.

Because CBE implies field settings and infers consortia arrangements, institutional refers not only to intra-institutional (typically college, school district, professional organization) but also inter-institutional organizations, management, and procedures. Flexibility may be defined in terms of responsiveness to need processes on materials. This includes communication systems, reporting practices, financial arrangements, and personnel and other resource assignments.

To ascertain the extent of institutional flexibility, the evaluation team will need to collect data on CBE and more conventional programs. (1) To what extent is CBE treated differently? (2) Are additional faculty assigned for development? Implementation? (3) Are added funds for materials and other resources made available? (4) How different is CBE in grading and registration practices? (5) What procedures and sign-offs were required to secure such exceptions? What changes were not acceptable? (6) Are faculty salaries and promotions based on CBE efforts? (7) Is there a formal consortium with bylaws and regular meetings of a governing board? (8) What funds, personnel, and other resources are contributed by each consortium member? Are any of these in addition to previous commitments? (10) Have time constraints for grading or financing CBE been modified? How? By what process?

Such questions may require (1) interviews with central university administrators; (2) description of committee and other approval processes; (3) testing out potential changes (such as (a) no grades; (b) registration at any time for instruction related to a competency; (c) no courses, (d) varied method for financing program, (e) additional funds to field test a radically new and personnel - rich program component) -- these could be in the form of vignettes tailored to the institution in which reactions are obtained from various individuals and groups as to the feasibility of the change; and (4) examining documents on promotions criteria.

24.0 The program is planned and operated as a totally unified, integrated system.

As discussed in many of the previous criteria, CBE is an approach to program design and management which is both comprehensive and commanding. The power of CBE is diminished to the extent than any phase is inconsistent with CBE principles. Thus the program itself must be conceptualization as a totally integrated system, designed around objectives, and continually revised.

The process for designing that program is objectives-oriented, with the objectives referenced to the time-line for developmental activities, involvement of personnel, and securing of resources. The process is planned around objectives.

Management too is objectives-based, whether related to a single or multiple institutions, to the process of management or involvement, to organization or governance. Objectives are specified then employed to guide development and implementation.

Training programs for persons designing and implementing CBE also employ CBE principles and practices. In fact, every aspect of program design and implementation can be evaluated by reflecting on its congruence with CBE principles.

A key word in this criterion is system, for system implies integration and interdependence of the various sub-systems. It implies wholeness, definition, and distinctiveness. This criterion culminates many others, but draws them together to focus on an over-riding concept -- the integracy of the system depends upon the extent to which each of its functioning parts contribute to that integracy.

This criterion actually draws its data base and its concepts from previous criteria. The evaluation team will want to review the operating principles inherent in other criteria and to speculate upon the consistency with which each independently and all as a group reflect CBE principles. Further, an analysis of the internal consistency of management and instructional practice as compared with student training program recommendation becomes vital. The analysis thus is two-fold: external between the system and its sub-systems and CBE principles; and internal consistency among sub-systems.

This particular criterion is a good one to summarize deliberations, and has been listed last for that reason. It provides a way to review other criteria, to compare them, to assess discrepancies, and to probe for refinement of previously considered data.

USES OF THE INSTRUMENT

As indicated in earlier sections of this document, the criteria have been used by staff members at a number of teacher training institutions. The primary usage up to the present time has been in institutions which are currently operating, at least for part of their students, a competency-based teacher education program. Two case study reports of such usage follow. Each were completed by individuals assigned the responsibility for using the criteria by their Dean of Education. At the same time that these two were completed, similar studies were being conducted at six other institutions where staff members followed similar patterns. At one of these six, Weber State College, the Dean, Caseel Burke, used the Criteria as the basis for a total program examination by virtually the entire Teacher Education faculty. He reports:

> ". . . . I briefly discussed it (the Criteria) with the department chairmen in Teacher Education, and gained their interest in reacting to it. I had the criteria dittoed, with space between each item for reaction, and mailed it to the teacher education faculty on April 11, with a statement of purpose. . . . . On Friday, April 19, the teacher education faculty met as a group and discussed the criteria more or less at random. Notes were taken of all responses during that session. A second meeting of the group was held on April 29, at which further input was received concerning the criteria . . . . Regarding the total effort of the faculty, it can be said that some members were more involved than others, but all engaged in the activity to some degree. . . . I noted on my own part considerable modifications of some ideas that were held prior to the meetings. I felt the exchange of ideas and discussion on the various topics was a building, improving activity. . ."

At other institutions the activities ranged from a single individual interviewing, studying, and observing their program and completing the criteria alone to a broad spectrum of committee assignments to piece together a composite reaction to the Criteria.

A secondary usage of the criteria has become apparent since its development. This usage was discussed briefly during the early brainstorming discussions held by the Consortium in 1972 but was not considered to be a realistic target. Such, however, has not been the case. Taking the criteria as a comprehensive definition of a competency-based teacher education program, it becomes a set of terminal objectives for an institution beginning to move towards a more performance-based program. The criteria, rather than being benchmarks to be used to evaluate an existing program, become areas of concern, needed development, and eventual target conditions or behaviors in which the development process must take place. While it is too early in the use of the criteria in this way to provide case studies reporting such use, the Consortium will collect such data and publish them in the future.

A CASE STUDY USING CBTE CRITERIA STATEMENTS

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The process employing the criteria statements was a consequence of a set of circumstances and assumptions. Currently, the College of Education is engaged in a number of program development activities. The combination of which, in time, will institutionalize competency based teacher education at the University of Houston.

To understand the process using the criteria statements requires some knowledge of our current stage of development. This can best be accomplished by descriptions of our program development activities to date, April 30, 1974.

PROGRAM

Course Revision

In the Fall, 1968, a few professors began to experiment by mediating sections of their courses. Subsequently, this took on the form of modular instruction with learning options available to students within the module. At this date, from fifty to seventy-five percent of the "regular" program uses modules and a competency based approach.

Pilot Program Number One

In the Summer, 1971, sixty-four students volunteered to participate in and assist with the development of a competency based teacher education program which began in the Fall, 1971 and ended in the Summer, 1973. Since professional education courses can only be offered at the junior and senior level, the program design encompassed the last two years of the student's bachelors degree program and included only the professional experiences. The group consisted of twenty-nine elementary education majors and thirty-five secondary and all-level majors. The instructional faculty for the first year consisted of nineteen part-time persons totaling five and one-half full-time equivalents. They were supported by outside funding which also provided most of the materials and other resources.

Pilot Program Number Two

In the Summer, 1972 eighty-four students volunteered to become involved in a revised version of Pilot Program Number One. This program began in the Fall, 1972 and is scheduled to end in the Summer, 1974. In January, 1973 an additional thirty-seven students began the program. These were students that might realistically expect to graduate with the other group. The total group of 121 consisted of 92 elementary education majors, 26 English/secondary education majors and 3 history/secondary education majors. Seventeen faculty or 3 full-time equivalents were assigned to the program. Most of the instructional faculty were supported by inside funding, as were the materials and other resources.

Institutionalized Program: Fall, 1973

In the Fall, 1973 all students taking their first education course were placed in a program which was to become the institutionalized version of the pilot program. Six hundred twenty-four students were involved in the program. They were separated into five teams which consisted of: 77 elementary education majors; 112 elementary/early childhood education majors; 130 elementary/special education majors; 174 Arts and Sciences - Teacher Education majors (prospective secondary school teachers); 131 all-level majors in Art, Music and Health/Physical Education. Each team consisted of four faculty members, with the exception of the Arts and Sciences - Teacher Education team with six, each having half-time assigned to the program. All funding for the programs came from inside sources.

Institutionalized Program: Spring, 1974

In the Spring, 1974 all students taking their first education course were placed in a program which was a revised version of the Fall, 1973 model. Three hundred eighty-seven students were involved in the program. They were separated into five teams as follows: EED - 47; EED/ECE - 77; EED/SPE - 73; A&S/TE - 113; and all-level - 77. Each of the three EED teams consisted of three faculty members with half-time assignments while each of the other two teams had four faculty members with half-time assignments.

PROGRAM SUMMARY

In reality, there are several "CBTE Programs" operating concurrently. Each program made significant changes based on the findings of its predecessor and the conditions that existed when the program was initiated. Consequently, the identified programs is similar yet very different. Additionally, the programs and activities for preparing elementary school teachers, secondary school teachers, and all-level teachers are different in many aspects.

The two institutionalization activities encompass three different designs or possibly six, since differences exist between the three EED teams.

GOVERNANCE

A set of conditions involving governance and/or management relate to the State Education Agency. Each institution with a teacher preparation program was directed to operationalize a Teacher Center by the beginning of the 1973-74 academic year. The Center is advisory, but must review all program changes prior to their submission to the Agency. Membership in the Center includes representation from the university, the public schools, and the teaching profession. This body replaced another body called the Council on Teacher Education that had a similar function, but whose membership did not specifically include the profession.

Due to conditions in and outside the College of Education, the faculty decided the Colleges' Constitution should be revised. Many of the revisions were a response to the needs of our new and developing programs. The process of revising the constitution began in Fall, 1973, and was completed in April, 1974. The changes included recognition of the Teacher Center and the inclusion of the profession and student membership on some of the College's committees.

CONCLUSION

The opportunity to use the criteria statements came at a time when programs and governance were in transition. Thus, the issue of how to apply the criteria statements had to be resolved pursuant to two questions. To what program or programs should the criteria statements be applied? And, what person or persons should apply the criteria statements? These questions were resolved with the assumption: "The criteria statements can be used to identify areas of strength and areas where additional effort need to be applied." Thus, it was decided to apply the statements generally to all program activities collectively. This allowed the process to be used when making judgements about specified areas in all programs, thereby facilitating decisions concerning their value and their continued use. This also allowed for

the identification of areas where additional attention was needed. It was decided that the person directly responsible and accountable for all the programs should apply the criteria statements. In our particular case, this was the Associate Dean with responsibility for the undergraduate teacher education programs.

The process was based on the assumption that "observable data should exist for each criterion statement as a prerequisite to quality considerations." Thus, the process included attempts to locate observable data for each of the criteria statements. This process is best illustrated by describing the activities associated with selected statements.

ILLUSTRATION NUMBER I

Statement

Competency statements are specified and revised based upon an analysis of job definition and theoretical formulation of professional responsibilities.

Process

After some thought about the statement it was decided the criteria could be satisfied by evaluating the following indicators:

1. Existence of a set of assumptions
2. Existence of a product model
3. Data in-put from the field
4. An indexing of competency statements to the assumptions; the product model; and/or the data in-put from the field

Three similar sets of assumptions about the program were located. Neither set had been officially approved. What seemed needed to completely satisfy this indicator is adoption of a set of assumptions by the College.

A product model for the pilot programs was located; however, there were none for the institutionalized program. This is a case where applying the criteria to one area of the program produced a positive response and when applying to another, a negative response. We have neglected having the pilot product model or its replacement formally accepted and approved by the larger group of faculty.

There was evidence of in-put from the field for the pilot programs and the secondary education program. The evidence was in the form of minutes of meetings, reports, and lists of revised competencies that resulted from these meetings. This indicator for meeting the criteria was partly satisfied, but needs additional work in some of the program areas.

No evidence was found in any area of indexing of competency statements to the assumptions; the product model; and/or the data in-put from the field.

Conclusion

The indicators that were selected to measure the program in the area identified by the criteria statement showed progress had been made. However, there are obvious areas in which additional effort needs to be applied.

ILLUSTRATION NUMBER 2

Statement

Instructional specifications are reviewed and revised based on learner feedback data.

Process

The indicators selected for use were as follows:

1. Evidence of a learner feed-back system
2. Evidence of change in the instructional specifications based on the feed-back

Students were provided with several opportunities to react to the program. These included: module evaluation forms to be completed when the module is exited; cards to be compiled on the quality of material used in the Learning Resource Center; and questionnaires, administered at the end of the semester, which sought reaction to the total semester's experience. Although a number of feed-back opportunities were identified, there does not seem to be a system of feed-back operating, at least in a formalized procedure.

As the operation of the pilot programs were reviewed and compared with the institutionalized program, differences were identified. Some of these changes and improvements can be traced to student feed-back.

Conclusion

The program conceptualization and design was sensitive to learner feelings. This is apparent due to the number of opportunities learners have to express their feelings and opinions about the program. The major problem centered lack of order and system in the overall process. There is much randomness for effective and efficient use of feed-back.

ANALYSIS

The preceeding descriptions are illustrative of the procedures applied to each criterion statement. In each instance, indicators that were observable and measurable were identified and used. (When using the criteria statements in this way, it is critical that indicators be identified for each statement.) The data obtained by using the indicators were then reviewed and evaluated. The process used was similar to a needs assessment and provided valuable information about the program. The remaining step is to compare the findings with the perceptions of the program developers and implementors; and, to make the changes which are viewed as necessary to move us more rapidly, effectively and efficiently toward our goal of institutionalization.

DATA UTILIZED IN APPLYING THE CONSORTIUM CRITERIA TO THE TOLEDO CBTE PROGRAMS

Stuart Cohen, University of Toledo

The initial request for me to respond to the Consortium Criteria document came from Dean Dickson. This was a natural assignment for a variety of reasons. I have served in the Toledo CBTE programs in such roles as: instructor on an interdisciplinary elementary team, instructional designer and revisor of modules, satellite school facilitator, and supervisor of CBTE students. More important perhaps, is my role as chairman of the committee on assessment and revision (A/R) which has among its responsibilities: (1) monitoring and modifying the computer-based information management system, (2) developing and monitoring on-going formative evaluation, and (3) designing and implementing programmatic research. To help accomplish these tasks I have been given some released time. I also serve on the College Instructional Improvement Committee (CIIC) which is the policy making body for the CBTE programs (see organizational chart appended). In addition, I chair the Department of Educational Psychology which has been intergrally involved in both the elementary and secondary CBTE programs.

Upon receipt of the Dean's request, I took the consortium documents to the weekly meeting of the A/R committee. Unfortunately, A/R has discovered that their work has expanded well beyond the time available to complete it. Thus, I was not welcomed with a ticker-type parade at the prospect of an additional task. Out of necessity the committee has acquired a division of labor. Individuals are often entrusted with sole responsibility for tasks with the stipulation that a final report be communicated to the committee for discussion and possible modification. With committee approval, I wrote the report in responding to the consortium criteria.

After reading the original 33 criteria and the explanations for each, I gathered the minutes from the CIIC meetings, the reports from the A/R meetings, copies of modules from both elementary and secondary programs, the formative evaluation report which had been completed for the secondary program, and even a copy of the original Toledo Model. In addition, I examined the analysis of the results of the CBTE program opinionaire administered to elementary students and secondary students. Armed with this data and my own biases I commenced to respond to each criterion in order of listing.

At the time I began the A/R committee had just completed a classification of all objectives using the following categories: Bloom's taxonomy, Gagne's hierarchy, Mager's criteria for a well stated objective, the nature of the response mode (selected, constructed, or field-performance) and the existence of both pre-tests and post-tests. This information provided an analytical scheme by which to examine the current program and helped in responding to questions regarding competency specifications instruction, and assessment.

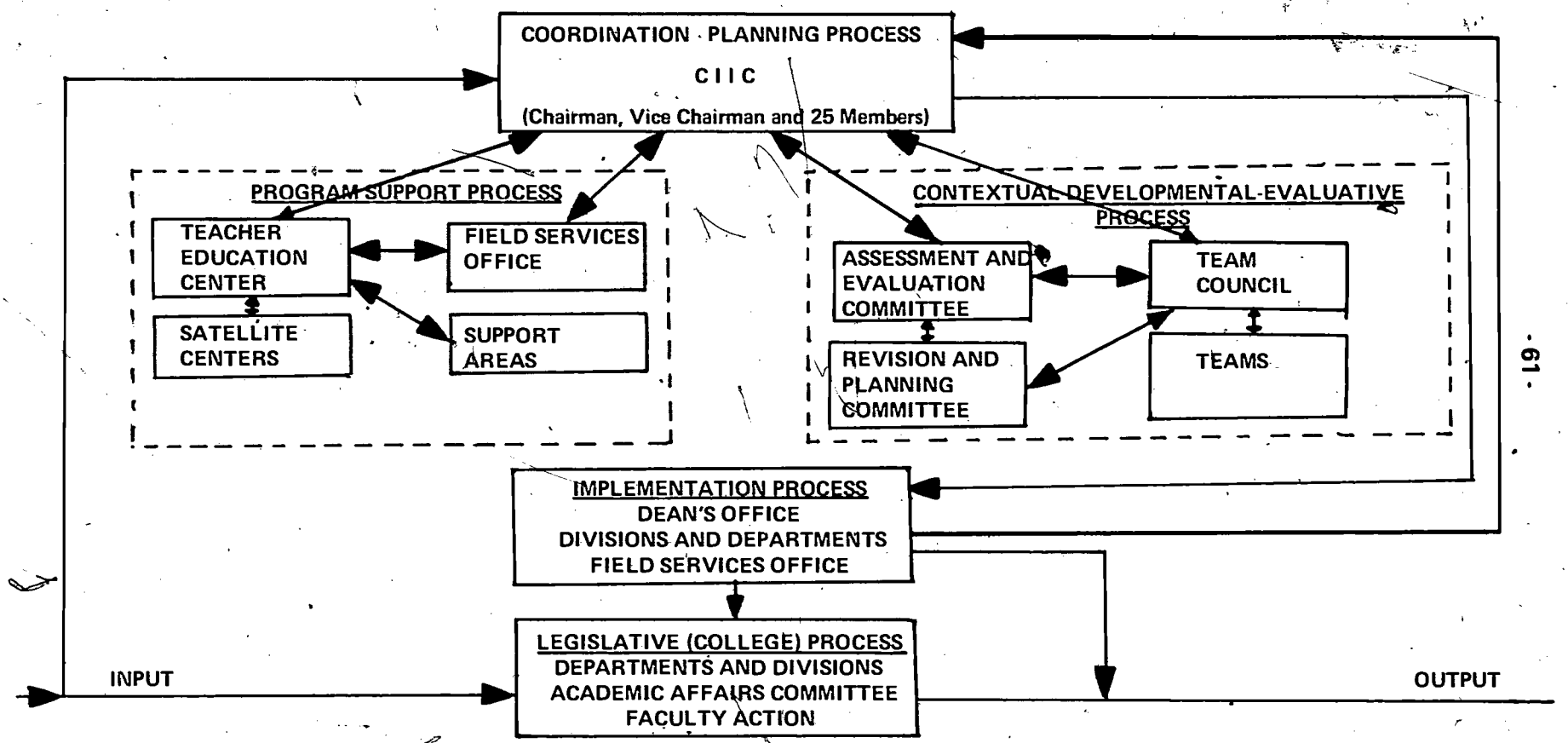
During this past year a number of opinionaires and questionnaires were administered to CBTE students, faculty and cooperating teachers. At the time of the response to the 33 criteria the data from one opinionaire was available.

The 32 item opinionaire was developed by the team council and contained items of concern expressed by both students and faculty. The opinionaire was administered to 79 secondary students and 190 elementary students representing each course block in the pre-service professional sequence prior to student teaching (the opinionaire and the results are appended). The frequency of response to a five item Likert scale from strongly agree to strongly disagree were tabulated collectively from the entire program and separately for each item for each of the six blocks. The results were also examined using a step-wise

multiple discriminate analysis. The latter analysis indicated that 16 items exceeded F values beyond .01 level. For the most part, items produced differential responses by blocks. The three questions which produced the greatest differences across teams were in order: "class time scheduled for advisor meetings is about right," "the pace of this class is too fast," and "we're doing too much work for 8 hours credit." Analysis of the overall responses produced interesting findings. For example, 61% of all students agreed or strongly agreed that "all things considered this class is pretty good" compared with 19% who disagreed or strongly disagreed with that statement. For the item "most of the things we do for this class seem relevant for teaching kids in schools," 59% strongly agreed or agreed while 21% strongly disagreed or disagreed. The opinionaire helped to confirm expectations but also produced surprises. For example, results revealed that students disliked using the testing center for pre-tests and post-tests. The results of this opinionaire were interpreted cautiously until it can be readministered regularly and definitive trends identified. Nevertheless, preliminary findings did provide information in responding to criteria concerning instruction, assessment, and management.

While the evaluation report of any one person is always subject to the idiosyncrasies of that individual's perceptions, the only data I can suggest that corroborates those perceptions is the fact that the results of the report submitted at the Houston conference were viewed by the A/R committee and members of the CIIC. So far, no one has challenged the statements contained therein. Like other CBTE efforts the Toledo program has its strengths and weaknesses. The use of the consortium criteria has helped to highlight both.

A REVISED PROCESS MODEL FOR PROGRAM DEVELOPMENT AND IMPLEMENTATION



THE INSTRUMENT

(AMPLIFIED FORMAT)

AMPLIFIED FORMAT

Competency Specifications

1.0 Competencies are based on an analysis of the professional role(s) and/or a theoretical formulation of professional responsibilities.

Indicators: 1.1 Rationale for program model and competencies is written

concrete and definitive			not written

1.2 Assumptions about learner's professional role, program constraints, and learning and instructional principles explicated

yes			no

1.3 Each competency in program can be logically linked to program model

all competencies	100% comp.	50% comp.	no comp.

1.4 Program personnel who designed program can describe rational and link competencies to model.

all personnel		only small core of developers

1.5 Entire program conceptualized as an integrated whole

total program conceptualized then specific parts developed	specific parts designed; overlap and gaps formed by analysis, then linked together	specific parts designed

1.6[1]

[1] Each criterion has an indicator added to facilitate the study of indicators unique to specific programs. Users are encouraged to add as many as are appropriate to the situation.

2.0 Competency statements describe outcomes expected from the performance of profession related functions, or those knowledges, skills, and attitudes thought to be essential to the performance of those functions.

Indicators: 2.1 Sub competencies and objectives are logically linked to those competencies expected for program completion.

always clearly related	usually related	never related

2.2 Instructional objectives are sequenced from entry-level behaviors to exit criteria.

sequence related to a logical rationale	sequence broad, determined by college	no sequence

2.3 Terminal competencies emphasize performance and/or consequence objectives, not cognitive objectives.

all are consequence and/or performance and affective competencies	most are consequence, performance, or affective competencies; a very few cognitive	all cognitive

2.4

3.0 Competency statements facilitate criterion-referenced assessment.

Indicators: 3.1 Competency statements are clear and concise.

all competency statements are clear to all students	most competency statements are clear to most students	none are clear

3.2 Statements include criteria levels and behaviors which meet acceptable standards.

all	none

3.3 Criteria are based on available evidence which is related to effective performance of teachers

all		none

3.4 Competency statements describe:

a. Settings or conditions for assessment

all statements		none

b. Content of performance

all statements		none

c. Level of performance for acceptable practice

all statements		none

3.5

4.0 Competencies are treated as tentative predictors of professional effectiveness, and are subjected to continual validation procedures.

Indicators: 4.1 Program includes research component to validate competencies

Personnel and resources are specifically assigned to this component	Planned validation effort is evident	Some validation testing is done	No planned validation effort is evident

4.2 Competency statements are continually analyzed and revised

Statements are systematically reviewed for possible deletion or revision for each training cycle	Some competencies are revised or deleted for each training cycle	Competencies are treated as permanent objectives

4.3

5.0 Competencies are specified and made public prior to instruction.

Indicators: 5.1 Required competencies and options are known to learners as they enter program.

Written statement of competencies and diagnostic procedures are provided student as he enters program.	Written requirements are available to student prior to each program part.	Students can not describe the program, its competencies, and their options.

5.2 All required competencies are specified prior to initial instruction.

All specified and published	most	competencies written as program implemented

5.3 Indicators of competence vary among individuals and from setting to setting.

Flexible indicators as appropriate	Rigid indicators required of all

5.4

6.0 Learners completing the CBE program demonstrate a wide range of competency profiles.

Indicators: 6.1 Both required and optional competencies are included in the program.

many options open to students	no options

6.2 Individual learner needs dictate program emphases.

always generally never

6.3 Required competencies and options are made known to students in advance.

always generally never

6.4 Program options are not closed.

yes no

6.5 Students may choose program options.

yes no

6.6 Learner cognitive styles, teaching setting, area of instruction aid in determining program options.

yes no

6.7

Instruction

7.0 The instructional program is derived from and linked to specified competencies.

Indicators: 7.1 Competencies determine the learning outcomes to be acquired.

All learning outcomes (knowledge, skills, etc.) of the instructional program are derived and linked to specified competencies.

Activities are not related to specified competencies.

7.2 Activities provided for the student to use in acquiring the competencies are determined by the nature of the competency: (i.e., One does not learn problem solving skills from expository teaching).

Activities are derived from and linked to the competencies to be acquired.	The relationships between activities and the competency being acquired are not evident.

7.3 The elements in evaluation instruments are directly related to specified competencies.

Each element of student evaluation instruments is directly tracable to a specified competency	There appear to be no relationships between the items in student evaluation instruments and specified competencies

7.4

8.0 Instruction which supports competency development is organized into units of manageable size.

Indicators: 8.1 The size of the instructional unit is dependent upon program variables.

The size of the instructional unit is related logically to appropriate program variables.	The size of the instructional unit is not logically established. The size varies widely.

8.2 Instructional units are organized and partitioned to provide data and feedback on learner's stage of development.

At the end of each instructional unit the learner is given feedback on progress.	The unit size is not related to the student's feedback needs.

8.3 Learner's experience with instructional units is used to determine suitability of unit size.

Student's feedback concerning the suitability of units (by length, complexity, amount of content, etc.) is used to revise units.	No attempt is made to obtain knowledge of student's experience in using units.

8.4

9.0 Instruction is organized and implemented so as to accommodate learner style, sequence preference, pacing and perceived needs.

Indicators: 9.1 Instruction provides alternative learning activities.

Instructional units provide suggested alternate learning activities which accommodate the students' learning style.	No provision is made in instructional units for individual students' learning styles.

9.2 Program sequence includes a wide range of options.

Program sequence options are known by learner.	Program sequence options are neither known or available to learner.

9.3 Instruction is paced to the learner.

Learners proceed at varying paces through each segment of the program.	Some differentiation is made in learner pacing but determined primarily by learner circumstances rather than program design.	Learners all proceed at the at the same pace through the program.

9.4 Instruction provides for learner perceived needs.

Instructional units include "learner select" options for instruction.	Instructional options for achieving competence not available to program.

9.5 The learner is given opportunities to assess effectiveness of his preferred learning styles.

There are opportunities for the student to closely examine with technical and professional assistance the learning styles preferred.	Little or no attention is given to the relative effectiveness of particular learning styles as they are applied by particular individuals in reaching their objectives.

9.6 Conferences are held with learners at prescribed intervals.

Know schedule of conferences combined with open system where conference really held when needed.	No conferences held.

9.7

10.0 Learner progress is determined by demonstrated competence.

10.1 The student is knowledgable of the general nature of competencies and criteria used to determine the extent to which performance approaches professional standards for acceptability.

Student describes competencies and the standards for acceptability.	Student not able to describe competencies request or criteria that are acceptable.

10.2 Learner progress records are adequately detailed in terms of the competencies to be acquired.

Learner progress records are adequately detailed, in terms of the competencies to be acquired.	Learner progress records not kept on file.

10.3 Learner progress records are used to chart future programs' directions.

Learner progress records are frequently used to chart program direction.	Learner progress records are seldom if ever used to chart program direction.

10.4 The demonstration of progress in acquiring the competency is the focus of attention in determining the extent to which the learner is experiencing success.

Success is determined by extent of progress in acquiring the competency.	Success is determined by some other other criterion such as amount of knowledge acquired, or number of activities completed.

10.5 The instruction management system makes provisions for students to be working at various points of development concurrently.

Instruction is modularized and organized to be carried out individually or in small groups by variable scheduling techniques.	Instruction is based on the assumption that all students should acquire the same learnings at the same time.

10.6

11.0 The extent of learner's progress in demonstrating competencies is made known to him throughout the program.

Indicators: 11.1 Learner progress records are maintained and available to all concerned (learner, instructors, counselors).

Learner progress records are accessible, adequately detailed, and open to himself, instructors, and counselors.	Learner progress records are inaccessible, inadequate, and/or closed to students.

11.2 The instructional staff (instructors and counselors) and learner periodically review progress records in conference.

Student progress conferences are held frequently.	Student progress conferences are non-existent.

11.3 The instructional management system provides for the frequent and/or continuous updating of the student's progress records.

Progress records updated on a continuing basis.	Progress records if available are only updated at infrequent (i.e., semester end) periods.

11.4 The student is provided with opportunities to acquire skill in analyzing and evaluating his own professional behavior.

In addition to being provided with information about his progress, the student is helped to acquire skill in analyzing his own professional behavior.	Little or no attention is given to the analysis of the student's progress, and none in helping the student acquire this skill himself.

11.5

12.0 Instructional specifications are reviewed and revised based on feedback data.

Indicators:

12.1 Specifications for the instructional system are explicit and all concerned (students, instructors, counselors, instructional professional services personnel, etc.) are aware of these specifications.

A list of specifications for the instructional system is published.	Neither specifications nor policies concerning the instructional system have been recorded much less made known to those involved.

12.2 Procedures have been established for having students assess the instructional system.

On a frequent periodic or continuing basis students are asked to react to the effectiveness of the procedures used in the instructional system.	No attempt is made to obtain students' reactions to the instructional procedures.

12.3 A wide range of data is considered in the analysis of the instructional system. (Student time, instructor time, instructional resources, management needs, learner performance, etc.).

An extensive collection of data is used for the analysis of the instructional system.	No attempt is made to analyze the operation of the instructional system.

12.4 Data obtained from the analysis of the instructional system as provided by student feedback are used to revise the system.

On a frequent periodic or continuing basis the instructional system is revised from data provided by student feedback.	No systematic or regular attempt is made to revise the instructional system. Changes are made primarily on demand from some condition or authority.

Assessment

13.0 Competency measures are related validly to competency statements.

Indicators: 13.1 A listing of performance indicators is included with each competency statement.

Multiple indicators are present for all competency statements	Few competency statements have multiple indicators	No competency statements have more than one indicator

13.2 Indicators are logically related to competency statements.

all competencies	some of them	none

13.3 Measuring instruments are logically related to indicators.

all competencies	some of them	none

13.4

14.0 Competency measures are specific, realistic, and sensitive to nuance.

Indicators: 14.1 Competency measures discriminate between learners who demonstrate and those who do not demonstrate competency.

All measures most of the time	Most measures most of the time	Undetermined

14.2 Measures assess consistency of performance over time.

Always	Usually	Seldom

14.3 Reliability of instruments is known and high.

Computed for all instruments and high	Some instruments	Not known

14.4 Procedures for measuring competency demonstration are specified so as to assume quality and consistency.

Generally followed and known by data collectors	Procedures not specified, known or followed.

14.5 Data collection procedures require realistic time and resource expenditures by students and staff.

Realistic	Unrealistic

14.6

15.0 Competency measures discriminate on the basis of standards set for competency demonstration.

Indicators: 15.1 Specific acceptable standards are established prior to competency demonstration for all competencies.

Standards are set and made public.	Some standards are set in advance	Standards are dependent upon individual case, decided after competency demonstration.

15.2 Standards are based upon data.

Logic, data or research is used as basis for standards.	Standards are present but primarily based upon judgment or on negotiation among developers.	Standards are unknown or dependent upon individual cases.

15.3 Competency measures provide data indicating the extent to which standards are met.

For all standards	For some standards	For no standards

15.4 Standards are realistic expectations of professional developmental.

All standards appropriate for particular phase 2 professional development.	Some standards are appropriate	Standards are not realistic for particular phase 4 program to which they are applied.

15.5 Standards are applied based on the demonstration context.

Standards may be negotiated prior to demonstration.	Standards are modified in individual cases after competency demonstration attempted.	Standards are non-resistant or rigidly applied.

15.6

16.0 Data provided by competency measures are manageable and useful in decision making.

Indicators: 16.1 Data are collected and stored in an easily retrievable form.

Data on competency measures are collected and centrally stored.	Some data are collected, storage not planned or centrally located.	Not collected or not stored.

16.2 Data are reported at pre-specified decision points.

Reports are helpful to decision makers	Some reports are made as a result of special needs.	No reports are generated.

16.3 Data are used in making programmatic decisions.

Data are generated as a basis for decision making.	Occasionally data used as a basis for decision making.	Not used.

16.4 Data collection and analysis procedures are feasible in terms of time, personnel, and resources.

Efficiently handled within resources.	Collected but seldom used because procedures are cumbersome.	Burden is on program, or not collected.

16.5 Data are easy to interpret.

Format of data analysis is clear.	Not easily interpretable.

16.6

17.0 Competency measures and standards are specified and made public prior to instruction.

Indicators: 17.1 Competency measures and standards are in a written form.

For all competency measures and standards.	Some are available.	None are written.

17.2 Competency measures and standards are specified in advance.

yes	for some	no

17.3 Students can describe competency measures and standards.

all known to them	some known	unknown to students

17.4 Procedures for demonstrating competencies are known to students and faculty.

Known to all.	Known to some.	Unknown to students.

17.5

Governance and Management

18.0 Policy statements are written to govern, in broad outline, the intended structure, content, operation and resource base of the program.

Indicators: 18.1 A formally recognized policy-making or governing body exists for the program.

A governing body is recognized as having responsibility and authority for making policies for the program.	No authority recognized to which one may turn to obtain knowledge of existing policies upon which to base program operations.

18.2 All institutions, agencies, organizations, and groups participating in the program are represented in policy decisions that affect the program.

When policies are formed all persons or groups which may be affected by those policies are represented.	No policies or policies made by one group.

18.3 Policy decisions are supported by and made after consideration of data on program effectiveness and resources required.

Data are collected, and systematically stored, and considered in reviewing, changing or creating policies.	No research base exists for policy decisions. Policies are the result of power relationships and personal opinions.

18.4 An explicit statement of policies for management and governance of the program is available to all involved or concerned.

Such a statement of policies is in printed form, current and frequently referred to by persons involved in management or governance of the program.	There appears to be no orderly statements of policies available to persons involved in management or governance of the program.

18.5 Associated with the statement of policies for management and governance of the program is a list of the competencies specified to be demonstrated for exit from the program.

There exists a manual or handbook which presents statements of competencies specified to be demonstrated for exit accompanied by interpretative narrative.	The expected outcomes of the program are not clearly available even in general statements.

18.6 Policies, organization, and management procedures are readily modified and regularly reviewed.

Process known to all; review process regular.	No known governance structure or a rigid, unmodifiable one.

18.7

19.0 Management functions, responsibilities, procedures and mechanisms are clearly defined and made explicit.

Indicators: 19.1 Management decisions reflect stated program philosophy and policy.

When management decisions are made, the decision is accompanied by a rationale which cites the program policies and/or assumptions upon which the decisions are made.	When decisions are made they are primarily forced by urgent conditions and represent an arbitrary solution derived from political rather than rational interaction.

19.2 The person or group with responsibility for decision-making has the authority and resources to implement the decision.

No person or group is required to implement a management decision unless provided with the authority and resources needed to fulfill the requirements of the decision.	Frequently persons or groups are asked to implement plans for which they have neither the resources nor the authority.

19.3 Program management and governance operations are designed to model the characteristics desired of schools and classroom in which program graduates will teach.

The criteria established for the management and governance of the teacher education program represents the kind of management and governance program which would be desirable for the schools in which the graduates are likely to teach.	The criteria used for assessing the management and governance of the teacher education program differ from those thought suitable for the schools in which the graduates are likely to teach.

19.4 Job definitions, staff selection, and job assignment responsibilities carried out by the same management-governance teams who are entrusted with other management-governance functions.

The preparation of job descriptions, the selection of staff and the assignment of personnel to tasks is a function of the management-governance team.	Various individuals in management are entrusted with various management functions. There is little or no attempt to coordinate.

19.5 Formally recognized procedures and mechanisms exist for arriving at the various levels of program management decisions.

Procedures for program management decisions and made public, used consistently, and acceptable to all involved.	Procedures for program management decisions are inconsistently followed.

Total Program

20.0 Program staff attempt to model the attitudes and behaviors desired of students in the program.

Indicators: 20.1 Faculty and staff meet regularly to work as teams.

Always	Sometimes	Never

20.2 Staff treats students with the respect and concern for support which is of the same high quality expected of graduates with their relation to school pupils.

Always	Sometimes	Never

20.3 Staff members openly share differences of philosophy and social positions so that students see the appropriateness and strength in diversity.

Always	Sometimes	Never

20.4 Instructional staff use the CBE principles in their own teaching.

Yes	No

20.5

21.0 Provisions are made for staff orientation, assessment, improvement, and reward.

Indicators: 21.1 Personnel training programs are competency-based.

Improvement of program personnel is through a CBE designed system.	Isolated activities.	No organized training program.

21.2 Evaluation profiles are kept on all staff and made available to them.

Yes	No

21.3 Faculty reward structure consistent with CBE role descriptions, requirements and developement.

Yes	No

21.4 Staff development activities are recognized as important as teaching, research, and publication.

Yes	No

21.5

22.0 Research and dissemination activities are an integral part of the total instructional system.

Indicators: 22.1 A research strategy for validating and revising the program is operational.

Written procedures, hypotheses, date; systematically applied.	Some efforts to study results of program.	Not being done.

22.2 Reports of completed studies are used in revising program.

Numerous written reports available, used.	Data or unwritten reports available.	No reports.

22.3 Research management system is operational.

Yes, comprehensive, workable, working.	Some processes, not systematic.	Not operational.

22.4 Procedures for sharing results with other programs and for obtaining their reports are operational.

Regularly shares with at least two programs, some sharing with ten others.	Haphazard sharing of results with other programs.	No relationship other than casual ones.

22.5 Staff can describe the research strategy, on-going studies, and conclusions of previous efforts.

All staff	Some	Only for studies he is engaged in.

22.6

23.0 Institutional flexibility is sufficient for all aspects of the program.

Indicators: 23.1 Resource allocation is based on student outcomes rather than course competencies.

Resources allocation determined by objectives completed by students.	Resources allocated by course enrollments.

23.2 Additional resources (personnel, materials, facilities, funds) are provided for program development.

30% or more increase for program design.	15% increase in resources (personnel and dollars).	None

23.3 Resources are contributed by all consortium members (school districts, colleges, professions) to collaborative effort beyond individual institutional needs.

All partners contribute funds and personnel to build consortium.	At least one institution provides additional funds.	No additional funds provided.

23.4 Course, grading, and program revision procedures support the tentativeness necessary to compliment the program.

Changes readily accepted on experimental basis.	Involved procedures and numerous authorizations by committees on administrators necessary for changes.	No changes possible.

23.5

24.0 The program is planned and operated as a totally unified, integrated system.

Indicators: 24.1 The program was planned as a totally integrated system.

Total program designed prior to independent parts.	Courses compiled into a program.	Independent parts grouped together and called a program.

24.2 The program is operated as a system.

Decisions reflect consideration of the total system.	Many isolated independent decisions.

24.3 Management is by objectives.

Yes	Somewhat	No

24.4 Evaluation system provides continual feedback to assess objectives achievement for various sub-systems.

Data available and used. Program revised.	Data occasionally used.	None operational.

24.5 When making decisions on one phase of the program, impact on other sub-systems is calculated and considered.

Always	Sometimes	Never

24.6 The sub-systems are continually being modified.

Yes	Somewhat	No

24.7 Harmony in principles among various sub-systems is apparent.

Internal consistency easily apparent.	Consistency can be generally identified.	No consistency, or not considered.

24.8 The program is continually evaluated against the actual professional needs, and refined based on feedback.

Formal review structure operational; changes continually being considered.		Program not amenable to modification.

24.9